Industrial Equipment News

FOUNDED 1933

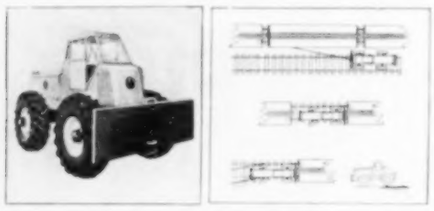
ORIGINAL REPORTER OF *What's New* IN EQUIPMENT, PARTS, MATERIALS

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

If you write maker identify as **IEN - 13234**

TRUCK . . Engine driven tractor to move and spot railroad cars

Source: FRANK G. HOUGH CO.
841 7th St., Libertyville, Ill.



Rides smoothly over obstructions

Railroad tracks present no obstacle to this new engine driven tractor in the company's Payloader line. It rides easily over them and provides ample traction with its earth mover tires to move and spot one or a half dozen railroad cars by either pushing or pulling. Its gasoline or diesel engine operates through a four speed transmission both forward and reverse.

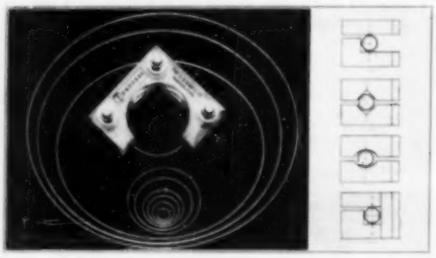
The drive includes a torque converter which enables the truck to pick up a load easily. Steering is on the rear wheels in connection with a power booster. All four wheels drive. Speeds in forward direction range from 2 to 17 mph. In reverse they are from 3 to 27 mph. Weight is about 25,000 pounds. Draw bar pull is about 8 ton with a gasoline engine drive and about 7 ton with a diesel engine.

Overall dimensions are about 15 by 8 by 7 feet. Standard equipment includes steel plate push bumpers at the front and rear, integral retracting draw bar links, an adjustable seat, booster-type hydraulic four-wheel brakes, a parking brake, a hand and foot throttle and a horn.

If you write maker identify as **IEN - 13235**

SEALING . . Metal tube rings to prevent leakage in flat connections

Source: D. S. D. MFG. CO.
2962-66 Whitney Ave., Hamden, Conn.



Engineering data on request

Pressure to 1,000 lb., or more under certain conditions and temperature from minus 150 to plus 1,000 deg. F. cover the service range of the company's new Toruseal line of metal tube rings and shapes. Section dimension of the tube ranges from 0.031 to 0.250 inch. Ring diameter is ½ to 48 inches.

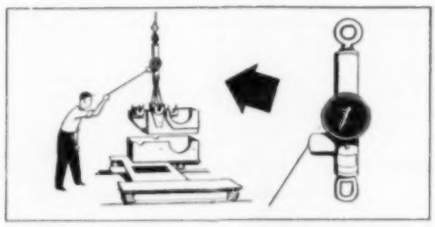
Installation is made in various designs of recess to hold and compress the tube and seal against leakage. Standard material is 18-8 stainless steel. Monel Metal, Inconel and other types of stainless can be specified, as well as special shapes and ring sizes, to meet requirements.

REMEMBER YOUR CHRISTMAS SEALS

If you write maker identify as **IEN - 13236**

HANDLING . . Hydraulic link to control final load lowering action

Source: MEFCO SALES & SERVICE CORP.
1507-11 Gardena Ave., Glendale 4, Calif.



Valve actuated for accurate action

Hydra-Set trade names a new hydraulic cylinder and spring backed piston assembly with a valve operated by-pass and, if desired, a load reading scale. The unit applies as a link between a load and a crane hook. The valve is operated by a lever, direct or at the end of a control line.

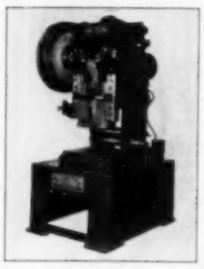
A load is brought into approximate position above the point where it is to be finally lowered. The operator on the floor then opens the valve so the load comes slowly down under its own weight and against hydraulic action. Movement is controlled precisely by oil flow through the by-pass. It is not dependent upon the crane operator.

Four sizes in the line rate 1 to 20 ton capacity. The 1, 2½ and 5 ton units have a maximum lowering stroke of 6 in. and measure 26 in. in overall length. The fourth and largest unit has maximum lowering stroke of 10 in. and overall length of 34 inches. The load dial measures 6 in. on three of the units, 8 in. on the largest. Weight of the largest assembly is 65 lb. so it can be handled by one man. When the load is released the spring returns the piston to its top position ready for the next application in lowering service.

If you write maker identify as **IEN - 13237**

PRESS . . For automatic stamping, 110 to 450 spm., built-in roll feed

Source: PRECISION WELDER & FLEXOPRESS CORP.
136 E. McMicken Ave., Cincinnati 10, Ohio



About $6,000

Model C-30 Flexopress is a new variable speed motor driven machine featuring a number of design points that are new to this type of equipment. The machine takes strip stock from the rear between its built-in feed rolls and moves the stock to the front in increments adjustable to a maximum of 12 inches. Stock width also is maximum at 12 inches. Thickness is adjustable in 10 steps to a maximum of ¼ in. by positioning a knob in index points on the side of the steel housing.

The pitman and ram are made of light alloy and the ram is mounted to ride in ball bearings operating in hardened and ground tool steel raceways. The pitman ball retainer nut locks against the full area of the retainer nut thread. Square bearing blocks are cross bolted and are fitted with replaceable inserts for the journal bearings. A band brake is anchored to the clutch arm so there is no brake drag during the automatic operation. A pneumatic or pin clutch can be specified.

The press takes a die set measuring to 14 by 14 inches and provides 4 in. from the bolster to the top of the lower 4-in. feed roll. Radial adjustment of the roll lift cam lobe is through 360 degrees. Stroke is standard at 2½ inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

DECEMBER, 1952
VOL. 20 No. 12

What do you need? . . . check this complete subject index for your current product needs. Asterisks (*) after page numbers mean editorial items. Others refer to advertisements.

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Address:
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A. J. GRANICK, Reader Service Manager
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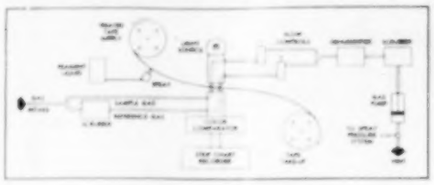
If you write maker identify as IEN - 13238

TESTING . . Electronic detector measures selected gas in atmosphere

Source: VITRO CORP.
11th Floor Woolworth Bldg., New York 7, N. Y.



Details in Microsensor Bulletin

A selected gas can be detected in quantities as small as 0.5 microgram per liter in an atmosphere suspected of containing it by this new Microsensor instrument. It is a combination assembly of a treated tape, reagent liquid supply, gas flow equipment, a Colorede detector and a strip chart recorder. Operation is in cycles of not more than 10 sec., depending on the chemical action involved to detect the given gas or vapor.

The sample gas is drawn in and divided so part of it passes through a scrubber, usually containing activated charcoal. The other portion passes untreated to a point where the two gases pass through the treated tape at adjacent separate spots. The two channeled gas flows are kept exactly equal by control devices and are rejoined after they have passed through the tape to move through a dehumidifier and a second scrubber to the gas pump from where they are vented. The tape is indexed at the predetermined interval. It is used dry in some cases and in others it is sprayed with the liquid reagent.

Actual comparison is accomplished by directing two equal beams of light through the two viewed spots on the tape where the gas passed through. A flicker mechanism alternately directs the light from one spot and then from the other to the photo multiplier tube in the detector. Output from this tube is an alternating signal with amplitude proportional to the difference in intensity of the two beams. This signal is amplified, synchronously rectified to a dc voltage and is used to operate the recording instrument and a gas alarm circuit.

If you write maker identify as IEN - 13239

PROTECTING . . Leather glove carries steel balls in finger ends

Source: BOSS MFG. CO.
219-23 W. First St., Kewanee, Ill.

You can order sample pair

Ball-Tip trade names a new leather glove designed to protect the ends of a worker's fingers as well as his hand in manner similar to the protection provided by safety shoes. The glove is designed particularly to handle heavy metal sheets and work that might pinch the worker's fingers or cut them.

The steel balls measure ⅜ in. in diameter and are stitched into the ends of the leather fingers which are cut sufficiently long to provide ample finger length. Two styles have 5-in. gauntlet cuff and 2½-in. safety cuff.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13240

For Low Height Repair Work get a . . .

Easily spotted in places inaccessible to other style jacks—the "Lo-Hite" will raise a 30-ton load up to 3". Pump is independent, and can be operated in an open area while jack is spotted in confined space under load.

Write for Bulletin AD-30 today.

THE DUFF-NORTON MANUFACTURING CO.
Main Plant and General Offices: PITTSBURGH 30, PA.—Canadian Plant: TORONTO 6, ONT.
"The House that Jacks Built"

If you write maker identify as IEN - 13241

Ball Bearings are Basic . . .

. . . in sensitive instrumentation. Moving parts call for the extremely accurate, low friction support that only ball bearings can provide. And, whether it's a low torque or high speed application, New Departures meet the most exacting specifications. Keep your eye on the BALL to be sure of your BEARINGS.

NOTHING ROLLS LIKE A BALL

NEW DEPARTURE
BALL BEARINGS

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONN.

If you write maker identify as IEN - 13242

KILLS FIRE

Just pick up this Kidde Dry Chemical Extinguisher, point the horn and pull the trigger. Kidde's patented Diffuser Horn gives you extra protection . . . and extra safety. Write for free literature.

Kidde

Walter Kidde & Company, Inc.
1236 Main St., Belleville 9, N. J.

The word "Kidde" and the Kidde seal are trade marks of Walter Kidde & Company, Inc. and its associated companies

If you write maker identify as IEN - 13243

EASY-FLO No. 3 TRIMETAL

the 3-in-1 alloy for "sandwich" brazing carbide tool tips

■ This new alloy provides the easy, reliable, low-cost way to mount cemented carbides for applications calling for the "sandwich" type braze. The EASY-FLO No. 3 makes the high strength joints for which this low temperature silver brazing alloy is noted, while the copper acts as a shock absorber and heat distributor. The combination assures joints that withstand the severe stresses and high heat of heavy duty cutting. EASY-FLO No. 3 TRIMETAL is available in strip and sheet and in precut shims to fit standard carbide tip sizes. Order from your nearest Handy & Harman distributor. If you can't locate him, write for "Distributor List."

HANDY & HARMAN 82 Fulton St., New York 38, N. Y.
In Canada: Handy & Harman of Canada, Ltd., Toronto

F. MORSE SMITH, Vice-President in Charge
W. E. IRISH, Editor and Vice-Pres.
A. J. GRANICK, Circulation Mgr.

INDUSTRIAL EQUIPMENT NEWS

INDUSTRY'S ORIGINAL MONTHLY PRODUCT INFORMATION SERVICE

THOMAS PUBLISHING COMPANY 461 EIGHTH AVE., NEW YORK 1, N. Y.

What's New

December, 1952

Dear Reader:

Ever since last Spring, when I summarized your replies to my "year end" letter for 1951, I have been looking forward to this 1952 opportunity to write to you again. Last year you gave us literally thousands of examples of new products you purchased after seeing them in IEN. You approved our continuing effort to publish basically complete information and urged us to include approximate prices whenever we could secure them.

You suggested the change we made in April to bring the subject index to the front page. You told us of your desire for better identification between your specific inquiries and the manufacturers' replies and we developed a means for the manufacturers to supply it.

Now, through this year, we have brought you some 5,300 additional editorial descriptions of new products, new literature and ideas selected for their potential usefulness to you. We are asking again, "How are we doing and what can we do further, in your interests, with IEN's specialized product information service?"

I hope you will turn this letter over and write to me on any or all of the following subjects, or on others on which you want to comment. It will help me a very great deal and we will appreciate it. What do you say?

Sincerely,

W. E. Irish

WEI:MLW.

W. E. Irish, Editor and V.P.
INDUSTRIAL EQUIPMENT NEWS

1. Examples of products seen in IEN and purchased in 1952.
2. Do you prefer to inquire direct or to use the reader service slip?
3. Your opinion of IEN's inquiry service slip as it stands.
4. What do you think of the information the makers send you?
5. What use do you make of the issue index and how might we improve it?
6. IEN's size by number of pages, dimensions, issue frequency.
7. Do you watch for IEN or use the first new product paper you receive?
8. How do you rank IEN with the other product news publications?

(The Following is for Our Records)

Your name and title _____

Your company _____

Principal product _____

Your responsibilities .. Production ___ Product Design ___ Plant Operation ___.

If you write maker identify as IEN - 13244

Just Out

A NEW BULLETIN
TO HELP YOU WITH HIGH TEMPERATURE PROBLEMS

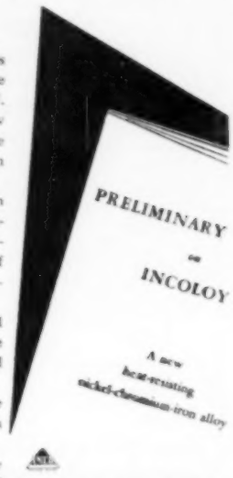
Incoloy (32 Ni.-21 Cr.) is the new high temperature sister metal to Inconel®. Its use is permitted now in most applications where Inconel is restricted by an N.P.A. order.

"Preliminary Report on Incoloy" gives you the technical data you need to determine the suitability of Incoloy for your high temperature applications.

It covers the chemical composition and gives the tensile properties and hardness.

It also covers available information on expansion and oxidation resistance.

Don't put it off—circle the reply card key and send for your free copy today.



THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N. Y.

If you write maker identify as IEN - 13245

VITROTEX—glass-insulated magnet wire for winding smaller coils with high heat protection

Miniaturization is easier with VITROTEX*. Its glass insulation fibers—only 0.0002 inches in diameter—are strong, yet soft and pliable . . . *can be wound more compactly*. Coil size can be reduced—without danger of failure due to high temperatures. As Class B magnet wire, VITROTEX can replace Class A—at a gain of 25 C hot spot protection. Made in square, rectangular and round cross-section, with exceptional uniformity due to painstaking quality control. *Reg. U.S. Pat. Off. 12668

● Write for Catalog C-49-A on nylon, cotton and glass-covered, and enamelled magnet wire. Anaconda Wire & Cable Company, 25 Broadway, New York 4, New York.

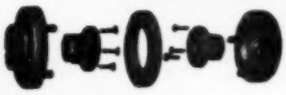
Class B	Class A
VITROTEX	ENAMEL
Class H	FORMVAR
SILICONE	KYNOMR
	NYLON

the right magnet wire for the job ANACONDA®

If you write maker identify as IEN - 13246

Browning

FLEXIBLE COUPLINGS with SPLIT TAPER COMPRESSION BUSHINGS



(1) Bushed type—eliminates expensive reboring—wide bore selection
(2) Completely machined from solid steel or malleable castings
(3) Compact-maximum strength
(4) Neoprene insert-added strength, resiliency, shock absorbing, oilproof, greaseproof, heat resistant
(5) Easy to mount, easy to remove, positive locking clamp fit, 1/6th to 40 H.P. range—available from stock

Write for free Literature and the name of the Browning Gripbelt distributor near you

BROWNING MANUFACTURING COMPANY
INCORPORATED
1950 BROWNING DRIVE MAYSVILLE, KENTUCKY

If you write maker identify as IEN - 13247

LATHE ATTACHMENT . . Turret head converts engine lathe to screw machine

Source: GENERAL ROTO CO.
8912-16 Melrose Ave., Los Angeles 46, Calif.

For 9 and 12 in. lathes

Eight tool bits ride in radial spring backed slides on an indexing face plate in this new Roto Head attachment. A combination of indexing and cam operated depth feed mounts at the front edge of the face plate. The complete attachment rides on the cross-ways of the carriage after removing the lathe's regular cross slide. Each tool slide is equipped with two contact buttons that can be set by micrometer adjustment to attain a desired depth of cut or work diameter. The operator positions the cam to contact one or the other of these buttons and so actually can set 16 different work diameters.

Bar stock to 1 in. in diameter is fed through the headstock on the lathe to a stop position. Then the attachment crank is turned to feed the first of the tool slides in to required depth. At this point the operator feeds the carriage forward along the ways of the lathe to make a longitudinal cut. It is limited by an adjustable stop at the back of the attachment for that particular tool position. When the longitudinal movement is completed the operator turns the crank again to index the face plate to the next tool position. The operations continue in sequence until the work piece is completed with final cut-off. The lathe tailstock can be employed to mount the work feed stop and carry additional tools in suitable turret assemblies.

If you write maker identify as IEN - 13248

HEATING . . Electric element made by printing on an insulating base

Source: RADIO CERAMICS CORP.
107-11 S. Superior St., Angola, Ind.

Wherever heat is needed

The cylinder shown in the illustration is an example of a new electric heating element which the company is prepared to manufacture to meet specified requirements. The element is produced by printing an electrically conductive coating on an insulating base such as asbestos paper, ceramic, glass, insulated metal, plastics. The finished element is moisture proof, oil and acid resistant and can be applied in a 250-volt ac. or dc. circuit.

Electric rating, to 5 watts per sq. in., is governed by the temperature limitations of the base material. Thus a heat-resistant phenolic plastic can be printed for 0.2 watt per sq. in. representing about 200 deg. F. A ceramic base can be printed for 5 watts to operate at 400 deg. F. Watt tolerance is within 10 per cent. Thermflex is the trade name.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13249

SAFETY EQUIPMENT FOR ALL INDUSTRIES

"FLUD-LITE" MAGNIFIER

Fluorescent Lighting for INSPECTORS, ASSEMBLY WORKERS, TOOLMAKERS, MACHINISTS *And Others Engaged In Close Work*

Floodlights the work area with scientifically focused, shadow-free fluorescent light, magnifying the work through a high quality 5" diameter lens with a focal distance of 13". Magnification two to one. Also available with auxiliary lens providing four to one magnification.
WRITE FOR BULLETIN NO. 58

IPCO *Safety Equipment for all Industries*
INDUSTRIAL PRODUCTS COMPANY
2801 N. FOURTH STREET • PHILADELPHIA 33, PA.

If you write maker identify as IEN - 13250

LUBRICATION ECONOMY

"We use LUBRIPLATE on big, hot, heavy bearings too!"

So states the plant engineer of the National Container Corporation of Jacksonville, Florida. In referring to the lubrication of their huge rotary kiln he said, "Since changing to LUBRIPLATE No. 8, wear on all bearings and journals has been reduced to a minimum."

1. LUBRIPLATE reduces friction and wear
2. LUBRIPLATE prevents rust and corrosion
3. LUBRIPLATE is economical to use

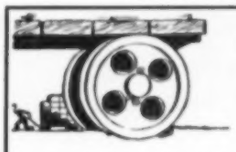
Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

VISIT OUR BOOTH
PLANT MAINTENANCE SHOW
CLEVELAND
JAN. 19-23, 1952

LUBRIPLATE DIVISION

Fiske Brothers Refining Co., Newark 5, N. J. • Toledo 5, O.
—DEALERS EVERYWHERE, consult your Classified Telephone Book—

If you write maker identify as IEN - 13251



IN A Rut?

DON'T LET WORN FLOORS SLOW UP PRODUCTION!

A *real* heavy-duty floor must be concrete—*good* concrete. 'Incor' 24-Hour Cement assures stronger, longer-lasting, heavy-duty concrete floors—by curing THOROUGHLY in 24 hours, instead of a week or more.

Don't let worn-out floors slow production—rebuild floors over a week-end with 'Incor'*—no plant tie-up—no time-loss!

Write for booklet, "Heavy-Duty Floors"—address Lone Star Cement Corporation, 100 Park Avenue, New York 17.

*Reg. U.S. Pat. Off.

LONE STAR CEMENT CORPORATION
Offices: Abilene, Tex. • Albany, N. Y. • Bethlehem, Pa. • Birmingham • Boston
Chicago • Dallas • Houston • Indianapolis • Kansas City, Mo. • New Orleans
New York • Norfolk • Philadelphia • Richmond • St. Louis • Washington, D. C.

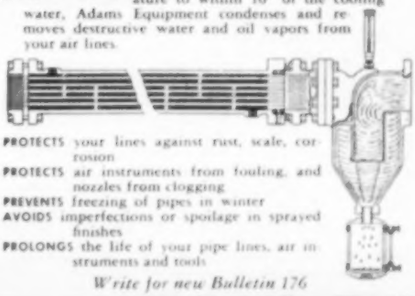
If you write maker identify as IEN - 13252

You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons
1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator.

with ADAMS Aftercooler and Cyclone Separator

● Reducing compressed air temperature to within 10° of the cooling water, Adams Equipment condenses and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

Write for new Bulletin 176

R. P. ADAMS CO., INC. 219 S. PARK DRIVE BUFFALO 17, N. Y.

If you write maker identify as IEN - 13253

In the shop – in the field –

A new kind of lubricant

Moly-sulfide is a tenacious solid-film lubricant with remarkable properties under extreme pressure, high velocity and fretting conditions. Many new uses for *Moly-sulfide* are being found every day in the shop and in the field.

We have compiled 156 case-histories of successful applications of molybdenum sulfide to solve a wide range of industrial and technical problems; these are published in a form most useful to those who want practical information on what has already been accomplished by this new kind of lubricant.

Send for your free copy of *Moly-sulfide In The Shop—In The Field*, a 40-page booklet of up-to-date information.

Moly-sulfide
A LITTLE GOES A LOT

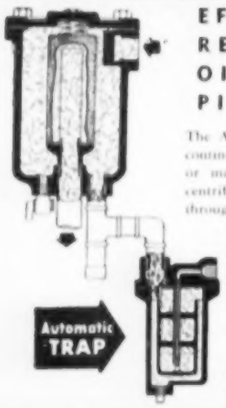
SEND FOR THIS FREE BOOKLET TODAY

Climax Molybdenum Company
500 Fifth Avenue · New York City 36 · N.Y.

MS-5A

If you write maker identify as IEN - 13254

Poro-Stone Filtration
FOR COMPRESSED AIR



EFFICIENTLY REMOVES OIL, WATER PIPE SCALE

The Adams *Poro-Stone Filter* gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation.

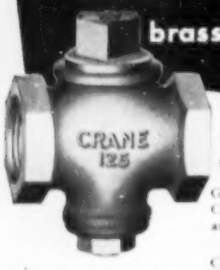
Write for complete data Bulletin 176

R. P. ADAMS CO., Inc.
219 E. Park Dr., Buffalo 17, N.Y.

ADAMS *Poro-Stone* AIR FILTER

If you write maker identify as IEN - 13255

CRANE *Quality*
brass steam cocks



125 and 250-POUND WORKING PRESSURES

Get your brass steam cocks from Crane and be sure of smooth operation with positive closure.

Big selection in the 125-Pound Class—two, three and four-way; square, flat and ice head; with and without check. Sizes up to 2-inch.

Extra strong 250-Pound steam cock of Crane Special Brass available only in two-way pattern with square head. Sizes up to 2-inch.

For full details on Crane Brass Steam Cocks ask your Crane Representative—or see your Crane Catalog.

CRANE CO., 836 S. Michigan Avenue, Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

CRANE *Everything for Every Piping System*

VALVES • FITTINGS • PIPE • PLUMBING AND HEATING

Industrial Equipment News

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Vol. 20 DECEMBER, 1952 No. 12

Each Important Page

Just about two hundred readers sent us "special" inquiries last month. They wrote them into the reader service form in addition to their selections among the item numbers. The special subjects were many and varied, as they are every month. We tapped a good number of our information contacts to secure the answers.

We noted one in particular among the special inquiries. It was for a product that actually was in the issue. The reader had missed it. The numbers he wrote into the form indicated that he had been stopped, for some reason, just one page before he would have seen it and had not been able to return to his reading before he sent the form to us to service.

He had taken the trouble, however, to write into the space for special inquiries his desire for information on the subject in question. We forwarded this inquiry to the maker along with others we received and notified him of our action so he could watch for the maker's reply.

The case points up, again, not only the time saving possibilities of IEN's front page index but also the decided advantage it presents to the busy plant man to gain a thorough as well as a quick picture of the currently available sources in any product or functional subject. Actually the index is a necessity under present day conditions as new facilities are being added to those previously developed with steadily increasing frequency.

In just this past year IEN has reported some 2,000 new product developments, many of them with no previous counterparts. It has published reviews on nearly 1,400 pieces of new product literature, about 500 examples of useful information on "how-to-do-it" subjects, about 400 of things others have done that you might do also. The total of "Wish I Had" questions is about 100. A comprehensive product and functional index is the only way to keep track of that many editorial subjects to say nothing of the approximate 10,000 product advertisements appearing in the year's issues. Functional headings are employed along with product headings because many of the subjects are most quickly identified by function. Aerating, air conditioning, balancing are examples. Under each are page references to information on those subjects.

We make every effort each month to compile the subjects so you can go quickly to those that interest you. We have put the index where you can get at it at once and refer to it repeatedly without "losing your place" in the paper. We indicate the editorial items with an asterisk so you can refer directly to either editorial or advertising if you are looking selectively.

We suggest leafing through the issue for a quick overall start, noting heading subjects that interest you in both the editorial and advertising items. Then take your subject notes to the index and check page numbers on each subject. Refer, one subject at a time, to the page numbers you have listed, read the items and note their numbers on your reader service form on which you want a salesman or additional data from the maker. Add any special questions on subjects not covered in the current issue and mail the form to us. We will take over from there. Follow this plan and your product finding job will quickly be completed each month with safe assurance that you have turned to each important page.

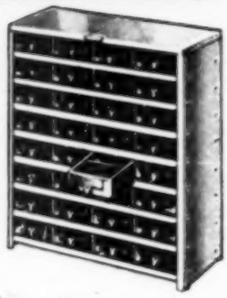
W. E. Irish.

If you write maker identify as IEN - 13256

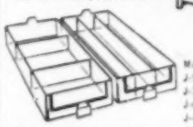
"HAZ-BIN, JR." Has Everything!
HANDIEST CABINET EVER BUILT FOR STORING SMALL PARTS

33-DRAWERS (96 compartments)

15 3/8" high, 6" deep, 12 1/2" wide **$12.95**



Contents visible! Lifetime-guaranteed, crystal-clear plastic drawers. Strong all-steel cabinet has individual drawer guides. Baked-on silver-gray hammer finish. Sent complete with index cards, removable lengthwise and crosswise drawer dividers, rubber feet.



Drawer size for all models—2 3/4" wide, 1 3/8" deep 5 7/8" long. Movable dividers separate each drawer into 3 compartments.

Made in 5 Sizes:

J-96 96 drawer (288 compartments)	$42.95
J-128 128 drawer (384 compartments)	57.95
J-64 64 drawer (192 compartments)	24.95
J-48 48 drawer (144 compartments)	20.95
J-32 32 drawer (96 compartments)	12.95
J-24 24 drawer (72 compartments)	10.95
J-16 16 drawer (48 compartments)	7.75
J-12 12 drawer (36 compartments)	5.95

SEND FOR FREE DESCRIPTIVE FOLDER

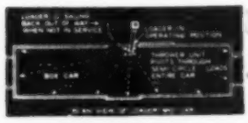
10 Day FREE Trial! Money Back Guaranteed!

Mfgd. by AKRO-MILS, INC. P. O. BOX M-989 AKRON 9, OHIO

If you write maker identify as IEN - 13257

SWIVELOADER
Loads Bulk Materials Into Box Cars
(1) Faster (2) Easier (3) At Low Cost

Powerful centrifugal thrower unit loads dry granular bulk materials up to 2" size into the far corners of box cars. One man operates loader without entering car. . . eliminates hand trimming. Handles 40 to 80 TPH depending on weight and nature of material.



Left—Car diagram shows how SWIVELOADER loads material into ALL parts of car from doorway.

Write for BULLETIN No. 1046

STEPHENS-ADAMSON MFG. CO.

Televel—Bin Level Controls · SealMaster Ball Bearings · Car Loaders · Car Pullers · Winches · Variable Speed Reducers · Saco Speed Reducers

231 RIDGEWAY AVE., AURORA, ILL.

If you write maker identify as IEN - 13258

PABCO MASTIPAVE
AMERICA'S NO. 1 LOW-COST LONG-LIFE FLOOR COVERING

"Pabco Mastipave floor covering is installed in our main trucking aisles and also in our men's and women's rest rooms," says Jesse Nitka, Factory Manager, B. Kuppenheimer & Co., Inc. – one of the nation's foremost clothing manufacturers.

"We are very well satisfied with the way these Pabco Mastipave floors are standing up under traffic. They look as well today as the day they were laid. We would not hesitate to recommend this type of flooring to anyone desiring a good wearing floor surface."

TAKES THE POUNDING OF MILLIONS OF FEET

Every building needs Pabco Mastipave! For 25 years, the Nation's blue chip industries, public carriers, hospitals, public school systems have demonstrated that Pabco Mastipave—both regular and non-slip Grip-Tread types—costs little, looks good, wears even better! Grip-Tread Mastipave is sold in roll goods only – regular Mastipave is available in roll goods and tiles.

SEND NOW FOR THE FULL STORY OF MASTIPAVE!

PABCO PRODUCTS, INC.
New York 16 • Chicago 54 • San Francisco 19
(Mail to Dept. E, nearest office)

GENTLEMEN: Without cost or obligation to me, please send folder, "Every Building Needs Pabco Mastipave."

NAME _____ CITY _____

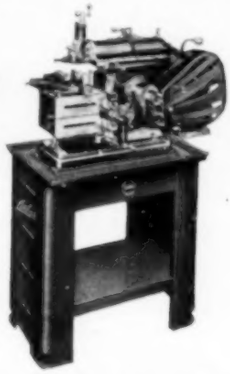
ADDRESS _____ STATE _____

If you write maker identify as IEN - 13259

Puts Small Parts Shaping On A Truly Efficient Basis

Atlas

7" SHAPER



Are you shaping small parts on a big machine? The Atlas saves set-up time, and power — machines to close tolerances — and releases your big equipment for the work it's best suited to handle.

The Atlas is the only 7" shaper that is *Timken bearing equipped* — the only 7" shaper with *roller bearings on countershaft spindle, cast iron ball gear with 1" face,* and provision for *outside* stroke adjustment. Built exceptionally heavy and rugged. Has ground ways, 8 speeds, 5 reversible automatic power cross feeds. These are just the highlights of this fine shaper. Send for the catalog with full details.

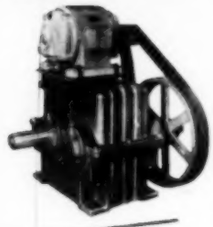
SEND FOR FREE CATALOG

ATLAS PRESS COMPANY
1207 NORTH PITCHER STREET
KALAMAZOO, MICHIGAN

Atlas DEPENDABLE QUALITY TOOLS SINCE 1911

If you write maker identify as IEN - 13260

SACO SPEED REDUCERS



SIMPLIFY DRIVE PROBLEMS

Adapt standard motors to the best speed for every job. Any reduction ratio between 10 to 1 and 60 to 1 is possible with a Saco Reducer by an easy change of sheaves on the V-belt drive.

Almost any full speed motor can be mounted on top or end of reducer. Pivoted motor base permits easy adjustment of belt tension, saves floor space and simplifies installation. Steel helical gears and ball bearings give long life and top efficiency.

The wide range of output speeds possible with a Saco Speed Reducer will allow the use of standard, full speed motors on a wide variety of jobs.
Two reductions attained (1) through V belts, (2) through steel helical gears.

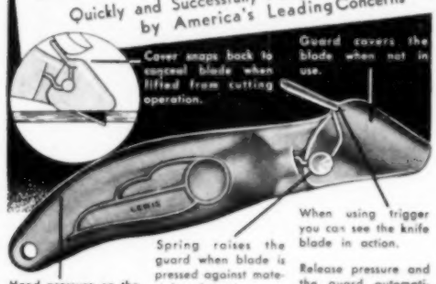
Write for Catalog 643

STEPHENS-ADAMSON MFG. CO.
Tellevel—Bin Level Controls · Car Loaders · Car Pullers · Winches · SealMaster Ball Bearings · Variable Speed Reducers · Saco Speed Reducers
231 RIDGEWAY AVE., AURORA, ILL.

If you write maker identify as IEN - 13261

NEW! LEWIS AUTOMATIC TRIGGER ACTION SAFETY KNIFE

Quickly and Successfully Adopted for Use by America's Leading Concerns



No other cutting tool like it. Eliminates the hazards of exposed cutting blades. You must operate it to appreciate its swift and sharp cutting . . . always automatically ready for use. Trigger action gives full blade visibility with safety.

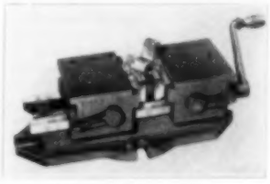
Retail Price $1.50

FLASH BOX OPENER CO., Inc.
52 W. Houston St. • New York 12, N. Y.

If you write maker identify as IEN - 13262

VISE . . With multiple plunger jaws that adjust to work by turning a crank

Source: CONNORS & DAVIS SALES CORP.
Circuit Ave. & Clark, West Springfield, Mass.



List is $275 and $375

Two rows of individual plungers make up the jaws in this new Positive Grip vise. They ride in and out of rectangular heads filled with thousands of hardened steel shot. Their rear ends ride on these shot. One head is secured to the base. The other slides on base ways when a crank operated lead-screw is turned. On the side of each head is a small lever to realign the jaws when the work shape changes from one run to another.

The individual plungers move as they make contact with the work and cause the shot to shift in the heads, in an action resembling the flow of hydraulic fluid, until each plunger is solidly backed. At this point the work is held firmly for a bench or machine operation. Reversing the crank will retract the movable head to release the work and leave the opening for the next piece of about the same shape, unless the operator desires to use the realigning levers.

Two sizes mount jaws measuring 4¼ and 6¼ in. in width by 2¼ and 3¾ in. in depth. Maximum opening is 3⅛ and 6⅛ inches. Overall dimensions are about 16 by 8 by 5 in. and 20 by 10 by 7 inches. Weights are 55 and 120 pounds. The four base slots take ⅝-in. hold down screws. There are nine plungers in the small assembly, 12 in the large one.

If you write maker identify as IEN - 13263

PRESS . . Solenoid operated for light punching, marking, cutting

Source: BLACK & WEBSTER INC.
443-45 Watertown St., Dept. N-8, Newton 58, Mass.

About 91 to $136

An impact blow, ranging from 1,500 to 3,500 lb., can be struck by this improved design of the company's Electropunch, previously described IEN 2158-69. Length of stroke ranges from 1¼ to 1⅝ in. in the four units in the line. The smallest can be operated at 180 cycles and the largest at 90 cycles per minute. Maximum working height below the spindle in "up" position is 7¼ in. in all four machines. Weight is 40 pounds.

The machine is essentially an electro-magnetic impact hammer consisting of a solenoid and spindle mounted in an adjustable bracket. The solenoid is energized when the switch is closed to drive the plunger downward for an impact blow. When the switch is opened a spring returns the plunger ready for the next operation. Base dimensions are 9 by 6½ inches. Column height at the rear is 12 inches. Operation, in standard design, is on 110-volt 60-cycle single-phase ac. Various accessories are available including a safety switch, a foot switch, a height adjustment, a single stroke control and repeat control.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13264

Electrically-Controlled AIR VALVE

Meets fully Group D, Class 1, National Electric Code Standards of National Association of Fire Underwriters, for wiring in hazardous locations.

The Bellows Explosion-proof Electroaire Valve is a complete packaged unit; 4-way directional slide valve, independent speed controls, low voltage solenoid controls. Three port sizes: ¼", ⅜", ½". Can be arranged for direct connection to or remote control of any air cylinder of suitable capacity. Write for Bulletin AVX-310. Address Dept. IEN 1252.

"Controlled-Air-Power for Faster, Safer, Better Production"

The Bellows Co.
AKRON 9, OHIO

If you write maker identify as IEN - 13265

PUT *Electric* HEAT WHERE YOU WANT IT

TO REDUCE COSTS, IMPROVE PRODUCTION

CHROMALOX *Electric* HEATING UNITS

Chromalox Electric Heaters give fast, uniform and dependable heat for heating gases, liquids, viscous fluids, platens, dies, molds, ovens, soft metals and countless other heating uses. They install easily and quickly, provide concentrated and controlled heat that is safe, dependable, clean and economical. Put time and money saving Chromalox Electric Heat to work in your plant now.

Write for "100 WAYS TO APPLY ELECTRIC HEAT"

It's filled with application ideas on versatile, low-cost Chromalox Heaters. Send for your copy now.

ID-17

Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.
See Chromalox Electric Radiant Heaters Advertisement, Page 17

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 13266

Special Self-Sticking
BRADY QUIK-LABELS

In Colors, Sizes, Shapes and Wording YOU Need!

- PRODUCTION
- INSPECTION
- INSTRUCTION
- TRADEMARKS
- PARTS & SERIAL NUMBERS

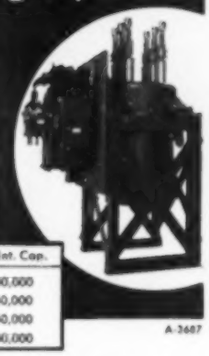
THOUSANDS OF USES throughout Industry. Brady self-sticking QUIK-LABELS can be made to your special requirements. Come on handy dispenser cards or rolls. Quickly applied—durable—silicone coated to resist dirt, grease, moisture. Low in cost, inexpensive to apply. Save time and money. Send for complete details and FREE samples of these special labels, today.

DISTRIBUTED IN 125 PRINCIPAL CITIES.

MANUFACTURERS OF SELF-STICKING PRODUCTS
W. H. BRADY COMPANY
765 W. GLENDALE, MILWAUKEE 12, WISCONSIN

If you write maker identify as IEN - 13267

For Interrupting Capacities 100,000 to 500,000 Kva



ALLIS-CHALMERS TYPE DZ INDOOR OIL CIRCUIT BREAKERS

Rated Kv	Rated Amperes	Kva Int. Cap.
7.2	600, 1200, 2000	100,000
13.8	600, 1200	150,000
13.8	1200	250,000
13.8	1200, 2000	500,000

A-3687

THESE INDOOR BREAKERS are widely used for station and industrial service. *Raptor* arc interrupting devices minimize contact burning and oil deterioration. Silver-plated main current carrying contacts and special alloy arcing contacts provide long life. Mechanically trip-free operator provides instant breaker operation under all fault conditions.

For complete information on these circuit breakers call your nearest A-C sales office, or write to Allis-Chalmers, Milwaukee 1, Wisconsin. Ask for Bulletins 71B6179 and 71B6129.

Raptor is an Allis-Chalmers trademark.

ALLIS-CHALMERS

If you write maker identify as IEN - 13268

3 WAY Flow "FLEX-A-SWITCH"

Flexible midrib and segmented side rails keep axles concentric at any setting to assure positive line of travel without guard rails. Can be used with curves and straight sections to distribute work in production or warehouse handling.

Furnished Through and Right only; Through and Left only or Right and Left and Through.

Write For Details

"LINE-X" ADAPTATION

METZGAR CO.

MFGRS. OF WHEEL & ROLLER GRAVITY & LIVE ROLLER CONVEYORS • POWER BELT CONVEYORS • SWITCHES • ACCESSORIES • METL DOLLIES & END WOOD WHEELS.

METZGAR

417 Douglas, N. W.

GRAND RAPIDS 4, MICH.

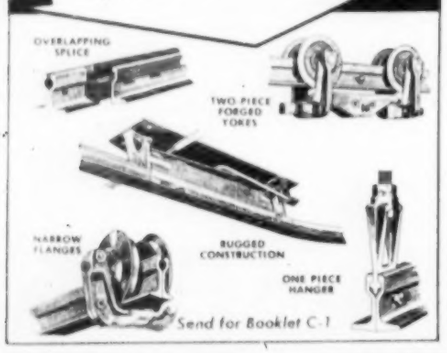
If you write maker identify as IEN - 13269

MONORAIL SYSTEMS FABRICATED TO FIT

American Monorail is fabricated to fit any handling job. Systems are available for hand or electric operation, including rubber wheel drive with local or remote control providing many automatic features.

AMERICAN MONORAIL CO.

18111 Athens Ave. • Cleveland 7, Ohio



Send for Booklet C-1

If you write maker identify as IEN - 13270

NEW SLIDE CHART

gives you information on

• BENDING RADII
• COIL DIAMETERS

for Carpenter stainless tubing and pipe from 3/8" to 5" O.D.

Just send us a note on your company letterhead or return the coupon below and your chart will be mailed promptly.

THE CARPENTER STEEL COMPANY
Alloy Tube Division, Union, N. J.

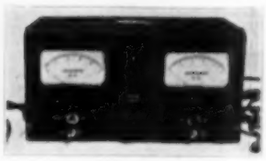
Please send me the Carpenter Bending & Coiling Slide Chart.

NAME _____ TITLE _____
(Please Print)
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____
(Plan name and title must be on coupon)

If you write maker identify as IEN - 13271

TESTING . . Variable voltage unit for electrical insulation checking

Source: ASSOCIATED RESEARCH INC.
3762 W. Belmont Ave., Chicago 18, Ill.



Ammeter is protected

Hypot Model 424 is a new dielectric strength testing instrument to provide a continuously variable dc voltage and means to measure output current in ranges to 5, 10, 50 and 100 microamperes. Resistance can be calculated based upon test voltage and output current flow, in a range to 5,000 volts dc. Special models are available with a range to 7,500 volts and within 5 microamperes to 2 milliamperes. The output terminates in a retractable tip high voltage prod and a rubber covered ground clip. Overall dimensions are 14 by 9 by 7½ inches. Weight is 24 pounds.

If you write maker identify as IEN - 13272

MAGNIFYING . . Adjustable spectacles rate 2X, provide wide field vision

Source: ARMCO MERCANTILE CO.
219-23 N. La Salle St., Room 101, Chicago 1, Ill.

Made in France

Detail inspection and similar work that requires close observance of detail are aided by this new adjustable magnifying spectacle with its double set of adjustable lenses. The unit provides a wide field vision in addition to adjustment for given conditions. Application can be made over ordinary prescription spectacles. List price of the new unit is $22.50.

If you write maker identify as IEN - 13273

TRUCK . . Heavy duty trailer rates 60 ton, 7½ by 12 foot body

Source: PHILLIPS MINE & MILL SUPPLY CO.
2500 Jane St., Pittsburgh 3, Pa.

Line rates 3 to 60 ton

Model TF-1200, with swivel assembly of the front axle only, and Model TD-1200 in which both axles swivel, are new additions to the company's line of heavy duty industrial trailers. Type TD is particularly suited for application in a train of trailers behind a single tractor. Application is in hauling heavy castings, forgings, machines, dies, loads of steel. Special sizes and capacities can be specified. The truck is mounted on eight rubber tired wheels riding on roller bearings.

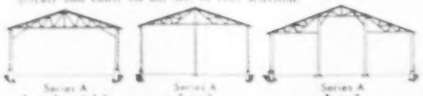
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 68

If you write maker identify as IEN - 13274

Here's An Idea That May Save You Thousands of Dollars!

Buy Truscon Ready-Made Steel Buildings Assembled for Your Individual Needs

Standardization and streamlining of production are the keynote to efficient, profitable operation. Meet today's needs for adequate manufacturing and storage facilities with Truscon Ready-Made Steel Buildings. They are made by the nation's largest manufacturer of steel building products. These standard unit, prefabricated structures can be combined in innumerable ways to form buildings for many purposes. Features include fire resistance, insulation, permanence, ease and speed of erection, low upkeep, low cost and high investment value. They can be dismantled and re-erected quickly and easily on any site of your selection.

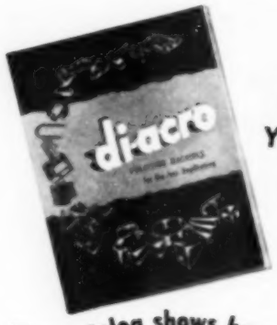


Truscon will cooperate with your local contractors for the speedy erection of these "any-purpose" Truscon Steel Buildings.

FREE BOOK! Write for free booklet on Truscon Ready-Made Steel Buildings. It shows actual installations and mechanical details, to help you develop your plans.

TRUSCON® STEEL DIVISION
REPUBLIC STEEL CORPORATION
1094 Albert Street
Youngstown 1, Ohio

If you write maker identify as IEN - 13275



Request Your Copy Now!

New catalog shows how

Di-Acro (pronounced Die-ack-ro) is the registered brand name for Di-ACRO Brakes, Notchers, Punch Presses, Rod Forters, Rollers, Shears, Benders.

"DIE-LESS DUPLICATING" SAVES TOOLING COSTS, SPEEDS PRODUCTION

di-acro PRECISION METALWORKING MACHINES

Shows many photos of "Die-Less Duplicating" forming technique with Di-Acro Machines. Features 36 hand and power models in quick reference tables. Explains free Di-Acro Engineering Service. Write for your copy now.

O'NEIL-IRWIN MANUFACTURING CO.
318 8th Avenue • Lake City, Minnesota

If you write maker identify as IEN - 13276

Speed Production . . . . Cut Fabrication Costs

With this Low-Priced Oxy-Acetylene Cutting Machine OXWELD CM-30

The OXWELD CM-30 Portable Cutting Machine is for cutting straight lines and bevels on metals up to 4 in. thick. It also will cut circles from 2¾ to 96 in. in diameter, and can be hand guided for simple shapes.

Convenient to Use

The CM-30 can be operated either on lightweight track for straight-line cutting, or on the work itself for cutting circles.

Write for a descriptive folder.

LINDE AIR PRODUCTS COMPANY
A DIVISION OF UNION CARBIDE AND CARBON CORPORATION
30 East 42nd Street • UCC • New York 17, N. Y.
In Canada: Dominion Oxygen Company, Limited, Toronto

If you write maker identify as IEN - 13277

for • SPRAYING • WASHING • RINSING • COOLING • AIR CONDITIONING

Get the most out of your Spraying Equipment with minimum power . . . with efficient spraying.

Use Yarway Nozzles. No internal vanes or other restrictions to clog or hinder flow.

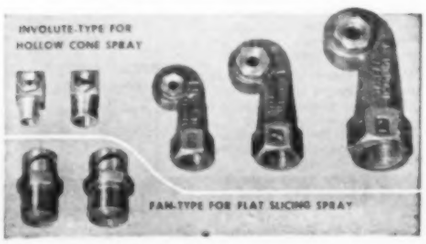
Wide range of standard sizes and capacities. Cast or machined from solid bar stock.

Thousands in use. Write for Bulletin N-616.

YARWAY

SPRAY NOZZLES

YARNALL-WARING COMPANY
122 Mermaid Avenue, Philadelphia 18, Pa.



If you write maker identify as IEN - 13278

. . . increase production, lower operating costs!

with finger tip control

LOVEJOY

variable

SPEED PULLEYS

A mere turn of the hand is all that is required for instant speed correction on your machinery. Changes in production schedules, operator speed adjustment or specification variations are accomplished without loss of time or labor. Benefits of LOVEJOY finger-tip-control pulleys are reflected in an improved product—manufactured at a lower cost. Sizes from fractional to 8 hp. Ratios to 3 to 1.

Get full information on this complete line of economical variable-speed pulleys. Write today for fully illustrated catalog and engineering manual.

LOVEJOY FLEXIBLE COUPLING CO.

5014 W. Lake Street • Chicago 44, Illinois

Also Mfrs. Lovejoy Universal Joints and Lovejoy Flexible Couplings

If you write maker identify as IEN - 13279

If you write maker identify as IEN - 13280

WANT MORE EFFICIENT—
LONGER LASTING STEEL STAMPS?

Knurled sides for positive grip—patented design provides perfect balance and deeper impressions. Especially recommended for toughest jobs on steel castings, cylinders, tool steel, etc. All sizes available ⅛" to 1" characters.

Write for Catalog 100

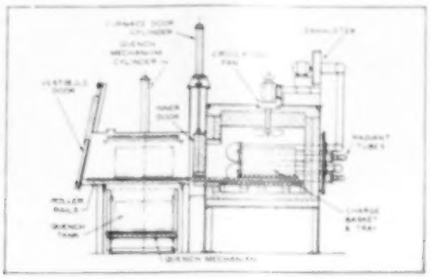
M. E. CUNNINGHAM CO.
SAFETY STEEL STAMPS

1039 Chateau Street • Pittsburgh 33, Pa.

If you write maker identify as IEN - 13281

HEAT TREATING . . Gas fired furnace, roller hearth and quench equipment

Source: SURFACE COMBUSTION CORP.
2373-77 Dorr St., Toledo 1, Ohio



For controlled atmosphere work

Allcase trade names the company's batch-type radiant tube furnace now available in work capacities of 500 and 1,600 lb. per hour. The new 500-lb. assembly provides an effective hearth area measuring 24 by 36 inches. Both furnaces are designed for a temperature range between 1,400 and 1,750 deg. F. Work is entered through a vestibule door at the forward end of a roller hearth that extends over a quench tank capable of taking a full furnace charge. Between the compartment formed by the vestibule door and the heating chamber itself is a second air operated inner door.

Four radiant tubes rate 600,000 btu. per hour. Products of combustion are retained within them. A circulating fan serves the heating chamber to maintain an even temperature. Work rides in and out in a basket on a tray. It remains in this position while it is lowered into the quench tank by the elevator mechanism and then returned to "up" position for discharge through the vestibule door. Applications include gas carburizing, dry cyaniding, clean hardening, bright annealing.

If you write maker identify as IEN - 13282

DRIVE . . Speed reducer sheave adds three speeds on drilling machine

Source: PULL-GEAR CO.
21123-27 Dequindre, Hazel Park, Mich

List is $85

A "back gear" is inserted into the motor drive on a drilling machine when this new Model PG-7 internally geared three-step sheave is employed in place of the standard sheave on the motor shaft. The new unit adds three speeds, by means of its 7 to 1 internal reducer gearing, when a lever is lifted and turned on the top center of the assembly. This compares to a 4½ to 1 reduction previously described IEN-G930-52.

Overall range is approximately 45 to 2,000 rpm. when the new sheave is in place. When the center lever is turned and dropped into its slot the drilling machine operates in its original speed range. Three bore sizes are ½, ⅝ and ¾ inch. A Model PG-7b is made for machines using the Type-B belt.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13283

6 American industry—takes the strain off human shoulders, puts it on a machine

"Let George do it" has been replaced by "Let's do that with a machine"—wherever the going is tiresome. Conveyors built to convenient working heights, save bending, lifting and straining. Result—a better satisfied, more productive working force. It's the American way. Remember you get value-plus, that something-added, when you specify "Logan engineered" conveying equipment. Write today to—

Logan Conveyors

LOGAN CO., 276 CABEL ST., LOUISVILLE, KY.

If you write maker identify as IEN - 13284

The NEW L&N Catalog for Speedomax Type G Instruments

• Marginally indexed for easy reference, this new 46 page catalog describes the uses and special features of the Speedomax G. It presents the unusual speed, sensitivity and stability which enables these controllers, recorders and indicators to help run processes at top efficiency. Another feature of the catalog is a section of schematic drawings and explanation of the Speedomax G electronic balancing system.

This publication is free . . . ask for catalog ND46(1) from our nearest office or from 4905 Stenton Ave., Phila. 44, Penna.

LEEDS & NORTHRUP
instruments • automatic controls • furnaces

If you write maker identify as IEN - 13285

if you have a problem of misalignment

This new book will be a big help. It contains complete details on the entire Baldwin-Rex line of flexible couplings—Tru-Flex, Semi-Flex, Twin-Flex, Compound and Floating Shaft types. It gives you the facts on why Baldwin-Rex Couplings are truly flexible, are shock absorbing without backlash and are easy to install. The book includes all specifications, prices and horsepower tables.

Just use the coupon to send for your free copy today.

Baldwin-Duckworth Division of Chain Belt Company
168 Plainfield Street
Springfield 2, Mass. 51-408

Please send me Flexible Coupling Bulletin.

Name.....
Company.....Dept.....
Address.....
City.....State.....

BALDWIN-REX

If you write maker identify as IEN - 13286

BLAW-KNOX GRATING

Electroforged into rigid, one-piece panels. Twisted cross bar prevents slipping.

. . . GIVES BETTER SERVICE ON 5 COUNTS

1 SAFER FOOTING
2 GREATER STRENGTH
3 LONGER LIFE
4 LOWER MAINTENANCE
5 MORE OPEN SPACE

Bring your open steel flooring problems to Blaw-Knox for expert help. Bulletin 2365 sent on request.

BLAW-KNOX DIVISION of Blaw-Knox Company
2050 Farmers Bank Bldg., Pittsburgh 22, Pa.

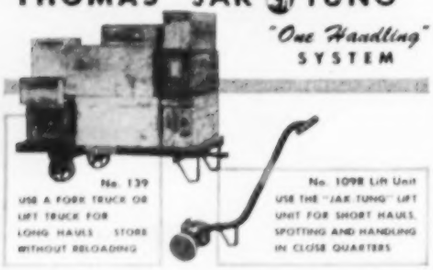
BLAW-KNOX Electroforged® STEEL GRATING

If you write make identify as IEN - 13287

FOR HAND OR POWER OPERATION

THOMAS JAK TUNG

"One Handling" SYSTEM



No. 139
USE A FORK TRUCK OR LIFT TRUCK FOR LONG HAULS . . . STORE WITHOUT RELOADING

No. 1098 Lift Unit
USE THE "JAK TUNG" LIFT UNIT FOR SHORT HAULS, SPOTTING AND HANDLING IN CLOSE QUARTERS

Move and store your loads without rehandling. Save time and manpower . . . storage and handling space with a THOMAS "JAK TUNG" SYSTEM. Photo at right shows a "JAK TUNG" truck being used with a Power Fork Truck and a "JAK TUNG" Lift Unit for faster, more efficient handling, without loading and unloading. Truck capacities from 1,750 to 6000 lbs. Can be "Job-Suited" to your needs with many THOMAS Superstructures. Available with special hitch for trailer train operation.

THOMAS TRUCK AND CASTER COMPANY
299 Mississippi River
KEOKUK, IOWA

Send for Free Literature

If you write make identify as IEN - 13288

You can PUNCH IT FULL OF HOLES and still have GREATER STRENGTH with LESS METAL . . .

Pattern 6-WL

RIGID-tex METALS

● Here's a metal so rugged that it can be punched full of holes, stamped, and fabricated in any way. Use it for all sorts of products — television chassis, electronic equipment, plane, ship, and auto parts, home appliances, and still *use less metal*. Because RIGID-TEX METALS are three-dimensional, design strengthened and textured, they have greatly increased rigidity. Lighter gage metals can be used, thus *saving critical materials*.

You'll find a thousand cost-reducing, profit-making uses for RIGID-TEX METALS — especially in times when the choice of the *right* metal means the success of your products. (Available in all ferrous and non-ferrous metals — solid or perforated — sheet or strip.)

WRITE TODAY on your company letterhead for new RIGID-TEX METALS Workability Folder and name of your local RIGID-TEX METALS Warehouse Distributors.

U.S. & Foreign Patents

Rigidized Metals Corporation
66412 OHIO STREET BUFFALO 3, N. Y.
Offices in Principal Cities in the U. S. and Canada

If you write make identify as IEN - 13289

CROWN MOTOR REPAIR SHOP EQUIPMENT

Time-Savers to Cut Costs On Motor Repair Jobs

Shorten the time it takes to put a motor through the repair shop and you reduce costs or increase your profits. CROWN Motor Repair Shop Equipment is designed by practical electrical men to increase shop volume and quality without increasing payroll. Every item in the CROWN Line has proved in shop practice to pay for itself many times over. Economical in first cost.

GET THIS FREE CATALOG TODAY!

Mail the Coupon

CROWN INDUSTRIAL PRODUCTS CO.
402 Borden Ave., Sycamore, Illinois

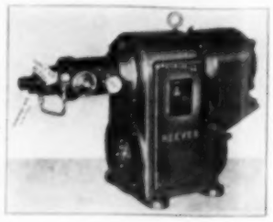
Please send me your new catalog of motor repair shop equipment.

NAME
COMPANY
ADDRESS
CITY ZONE STATE

If you write make identify as IEN - 13290

DRIVE . . Variable speed unit actuated by control air from instrument

Source: REEVES PULLEY CO.
800 N. Wilson St., Columbus, Ind.



For automatic response

New assembly of the company's variable pitch sheaves and motor includes a Conoflow power cylinder for pitch adjustment. It employs air pressure from a shop line and control air, at 3 to 15 lb., from a connected pneumatic instrument. The drive applies in proportioning flow of liquids, gases, chemicals, grain; in regulating pressure, temperature, liquid level, all under control of the pneumatic instrument.

The company is prepared to supply the assembly for any of its motor-driven variable speed units or transmissions to meet specified requirements in drive capacities to 25 hp. and speed range maximum at 6 to 1.

If you write make identify as IEN - 13291

CONVEYING . . Gravity section rates 125 lb. per ball bearing roller

Source: MECHANICAL HANDLING SYSTEMS INC.
4605 Nancy Ave., Detroit 12, Mich.

In straight and curved sections

No. 2520 is a new gravity conveyor section mounting 2-in. rollers in 2½-in. channels made of 12 gage steel with angle iron cross bracing. Each roller rates 125-lb. load capacity. A 10-ft. section, supported at the two ends, will carry a 500-lb. distributed load.

The section is available in 12 to 28-in. widths in five steps. Rollers can be specified on multiples of 3 or 4-in. centers. The ball bearings are machined, not stamped.

If you write make identify as IEN - 13292

PUMP . . Condensate return unit, 800 to 10,000 sq. ft. of radiation

Source: AURORA PUMP CO.
52 Loucks St., Aurora, Ill.

Turbine pump with direct connected motor is rubber mounted in vertical position on a cast iron receiver in this new Apco-Matic condensate return pump. It is available in simplex and duplex assemblies in a capacity range from 800 to 10,000 sq. ft. of equivalent direct radiation and for pressure to 50 pounds. The pump is made of bronze. It can be removed for repair or replacement without disturbing the pipe connections.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

If you write make identify as IEN - 13293

CUT HANDLING COSTS...SPEED LOADING with Wayne LOADING DOCK LIFTS

Wayne Materials Lift

Wayne Cross-Over Bridge

TILT TO MEET LOAD . . . CUT LOADING TIME IN HALF

Loading dock lift is adjusted to correct height . . . industrial trucks to roll on and off easily. No chain lifts, pry bars or costly manual labor necessary. Wayne Dock Lifts do it all . . . with valve or push button control of quick acting hydraulic system. Adjusts to any height.

From loading docks to production line, there's a Wayne Industrial Lift. Wayne Lifts include ramps, sidewalk elevators, material lifts, cross-over bridges, service lifts and others. Write for Wayne Industrial Lift booklet.

THE WAYNE PUMP COMPANY
Salisbury, Maryland • Toronto, Canada

Wayne NATION WIDE SERVICE

WAYNE LIFT DIVISION, Ironton, Ohio

If you write make identify as IEN - 13294

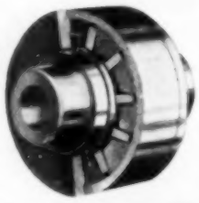
KUSHION-TORQ

WHAT IT WILL DO FOR YOU

The Cushion Torque of Kanti-Lever Couplings absorbs the hammer blows of sudden or reversing loads and dampens the torsional and radial vibration that causes wear, fatigue and sometimes failure of Motors, Speed Reducers, Ball Bearings and productive machinery. No other coupling is like the Kanti-Lever. It has a circular series of laminated Cantilevers of 200,000 lb. steel, operating in slots, the tapered sides of which automatically stiffen the Cantilevers under increased overloads. Special end play up to four inches is possible without end thrust. The outer periphery of the Kanti-Lever is available as a brake drum for quick stopping or reversing machinery.

Send for Bulletin No. 28-N.

Kanti-Lever Couplings



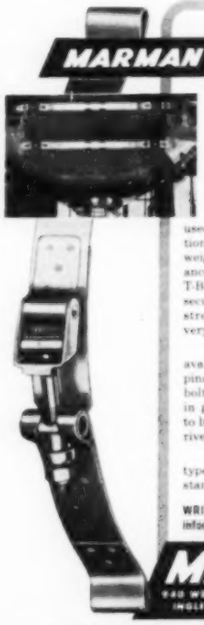
4,000,000 h.p. in Use

MFRS. OF SECTIONAL STOCK RACKS

BROWN ENGINEERING CO.
122 NORTH 3RD ST. READING, PENNA.

If you write make identify as IEN - 13295

MARMAN STRAPS



Attach or cradle Tanks, Equipment, Accessories and Ducts

Versatile Marman Straps can be used in an infinite variety of applications. Their principle benefits are light weight, high strength, corrosion resistance. The patented Quick Coupler for T-Bolt type latches provides maximum security under conditions of extreme stress and vibration, and allows for very rapid assembly and disassembly.

Among many types of strap ends available are loop ends for use with pins or clevis bolts, slotted ends for eye bolts, T-Bolt ends for bolting directly in place, toggle ends for attachment to bolts or studs and straight ends for riveting or spot welding.

Strap material width and latch type may be selected from any of the standard Marman series.

WRITE DEPT. I-12 for complete information on Marman Straps.

MARMAN PRODUCTS CO., INC.
940 WEST FLORENCE AVENUE
INGLEWOOD, CALIFORNIA

If you write make identify as IEN - 13296

Sir Launcelot Wins All His Duels ...'cause PROTO means PROfessional TOols!

One reason why PROTO tools are *professional* tools is that they are made from superior PROTO-specified alloy steels. Known as PROTOLOY, these special alloy steels provide great strength, hardness, toughness — and extra long life. Scientific heat treatment, advanced designs, accurate manufacture, a meaningful guarantee and completeness of line are more reasons why experts prefer PROTO. For truly *professional* tools, see your PROTO dealer. Send 10¢ for 68-page catalog to

PLOMB TOOL COMPANY
2271R Santa Fe Ave., Los Angeles 54, Calif.

The PROTO Line includes Wrenches, Pliers, Screwdrivers, Punches, Chisels, Sockets & Handles, and Many Others.

Eastern Factory—Jamestown, N. Y.

PROTO TOOLS LOS ANGELES

If you write maker identify as IEN - 13297

Assembly moves faster

Some sharp-eyed mechanics are expert at estimating the size of a plain head cap screw. But most assembly workers, and especially learners, need the screw that puts size beyond question.

P-K SIZE-MARK SOCKET HEAD CAP SCREW

The size is clearly incised on the head, can be seen at a glance. Saves time and wasted screws when sizes get mixed up, prevents errors and spoiled work. It's a good sales feature, too, because installation and repair work on your product is simpler and easier.

Only P-K offers both Size-Mark and Gear Grip in Socket Head Cap Screws. Ask for samples. Parker-Kalon Corporation, 200 Varick St., New York 14.

Cold-forged

PARKER-KALON • SOCKET SCREWS

If you write maker identify as IEN - 13298

—AND THESE MODERN POWER-DRIVEN ASSEMBLING MACHINES WILL DO THE JOB FOR YOU AT A REMARKABLE TIME AND LABOR-SAVING PACE.

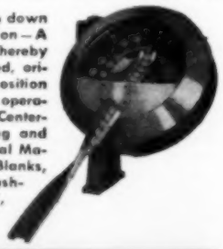
The D.P.S. line of Power Screwdrivers, Motorized Hoppers, Nut Drivers and other power-driven equipment has proved an absolute necessity in the present-day program of production assembling. In replacing slow, expensive hand methods in thousands of plants, they are now intrenched as an indispensable aid in meeting urgent calendar requirements—WRITE US, send sample assembly, receive our catalog, and we shall gladly offer suggestions so that you, too, may profit by the use of D.P.S. equipment.

DPS POWER SCREWDRIVERS

DRIVE SCREWS AS FAST AS ONE A SECOND

All types of screws: Machine screws, sheet metal screws, self-tapping screws, with standard round, flat, binder, fillister or hex heads and special heads. No marring of heads or stripping threads; all screws driven to uniform tension. Hopper fed, SCREWS ALWAYS IN SIGHT OF OPERATOR, 3 models.

Motorized HOPPER UNITS



Picks them up and lays them down in exactly the right position—A selective feeding device whereby production parts are selected, oriented and fed in a given position for primary and secondary operations. Adaptable to Presses, Centerless Grinders, Thread Rolling and Slotting Machines and Special Machines. Feeds Screws, Screw Blanks, Rivets, Pins, Nuts, Discs, Washers, Steel Balls, etc. 6 sizes, 8", 10", 12", 16", 24" and 30" diameters.

DETROIT POWER SCREWDRIVER CO.

2815 W. FORT ST. DETROIT 16, MICH.

If you write maker identify as IEN - 13300

GENERATOR . . Brushless ac., 0.25 to 25 kva., 400 cycles, 120 volts

Source: GEORATOR CORP.
1822 N. Nash St., Arlington, Va.

Carefree operation

Nobrush trade names a new ac. electric generator that employs a cast aluminum rotor with permanent magnets mounted in it. Brushes, slip rings or commutator are not required. Sparking, radio interference, explosion hazard and brush maintenance are eliminated. The generator is available with a ball bearing rotor for coupled drive or with direct mounting on an engine or motor.

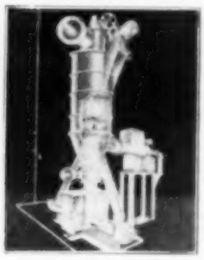
The smallest unit operates at 3,428 rpm. and rates 0.25 kva. It is available only in single phase design. It measures 7 in. in diameter by 3⅛ in. in housing length. The shaft extension measures 2 in. and the shaft diameter is ½ inch. This unit weighs 8 pounds.

The largest assembly in the line rates 25 kva. Its housing is 20 in. in diameter by 10 in. in length. Its shaft extends 5⅞ in. and is 2 in. in diameter. This unit is available in three-phase design. Application can be stationary or portable.

If you write maker identify as IEN - 13301

PULVERIZING . . Jet equipment impinges solid material upon itself

Source: MAJAC ENGINEERING CO.
1093 Freeport Road, Blawnox, Pa.



Engineered to product

Solid materials, such as limestone, ore, stone, coal, coke, sand, gypsum, graphite, cement are reduced to fine powders by passage through the company's new jet pulverizer. The equipment employs steam, gas, compressed air to pick the material up and impinge it upon itself through opposed nozzles.

Assembly includes feeding equipment, a classifier, the nozzles and connection passages for the material flow. The classifier maintains continuous separating action to deliver the fines and return the balance to the pulverizing circuit for further reduction.

Pulverized fuel can be delivered with fineness in excess of 90 per cent through a 200-mesh screen. Fibrous materials such as wood pulp and asbestos can be ground and the fibre opened to produce a uniform product. Fineness control is accomplished by varying the distance between the nozzles, the pressure at the nozzles, the rotating speed of the classifier rotor and the amount of strip air.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

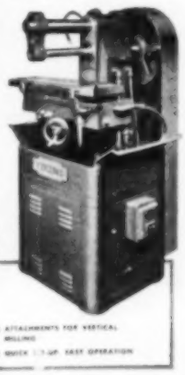
If you write maker identify as IEN - 13302

The Versatile

VIKING Hydraulic SPEED-MILL

For conventional and climb milling

IDEALLY SUITED FOR SECONDARY SCREW MACHINE WORK



- INFINITE VARIABLE SPEED WITH DUAL-CONTROLLED DRIVE
- AUTOMATIC HYDRAULIC CYCLING
- OVERSIZE DESIGN AND CONSTRUCTION
- HEAVY FLYWHEEL DESIGN GIVES SMOOTHER DRIVE, BETTER FINISHES
- ATTACHMENTS FOR VERTICAL MILLING
- QUICK [illegible] UP, EASY OPERATION

The new improved Viking Speed-Mill, ideal for secondary operation work in screw machine shops, is the answer to many light production milling problems. With the Viking, small, light pieces requiring multiple cuts, good finishes, and close limits can be machined quickly, accurately and economically. Set-ups are fast, operation is easy, even with relatively untrained operators. Automatic hydraulic cycling and infinite spindle speed variations assure higher production efficiency and longer cutter life.

BRIEF SPECS: [illegible]

Emergency delivery in less than 30 days. For complete information write—

VIKING *Industries*

220 MONTAGUE ST. • ROCKFORD, ILLINOIS

If you write maker identify as IEN - 13303

Here's why the STA-WARM METHOD *Melts Compounds so Efficiently*

Multiple circuits, controlled by sensitive bimetallic relays, automatically turn heat on . . . or off . . . as the compound level rises or falls in the tank.

You specify the "ideal" temperature for melting the particular compound your plant uses and Sta-Warm will provide the tank to hold to within a 1°F.(±) variation.

It's the basic design in the Sta-Warm Method that makes this valuable feature available to you.

Better send your current problem to Sta-Warm now. No obligation.

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

If you write maker identify as IEN - 13304

NEED COPIES?

MODERN MIMEOGRAPHING—New equipment and supplies for the fast production of copies on a wide variety of paper and card stocks. A. B. Dick mimeograph products are for use with all makes of suitable stencil duplicating products.

MODERN OFFSET—A. B. Dick lithograph direct image plates and masters provide for (1) longer runs with sharp definition—(2) easier corrections—(3) more successful filing—(4) marked superiority in resistance to fingerprints.

MODERN SPIRIT DUPLICATING—A. B. Dick CLEEN-SEAL master sets and spirit carbons guard against stains and smudges. Available in a variety of sizes for long, medium and short runs. Five brilliant colors—purple, red, green, blue and black.

Write Dept. IEN 1252 for full information—or call the A. B. Dick Distributor listed in the classified section of the phone book.

A·B·DICK
A. B. Dick Company • 5700 Touhy Avenue • Chicago 31, Illinois

If you write maker identify as IEN - 13305

Save Installation Time!

SPECIFY AN ALLIS-CHALMERS COMBINATION STARTER

When you need both a magnetic starter and the protection of a safety switch, a neat installation can be made quickly with an Allis-Chalmers circuit breaker type combination starter. Starter and switch are factory assembled and wired in a single enclosure to save you installation time and space.

You get a starter that has long-lasting contacts, non-carbonizing arc chambers and easily accessible parts. The circuit breaker gives short circuit protection . . . serves as a disconnect switch.

Combination starters are available in sizes 0 through 5 for motors from fractional to 200 hp, 110-550 volts.

Remember, there is an Allis-Chalmers starter for every motor need. All are designed and constructed for long life, easy inspection, speedy installation. Bulletin 14B7132 describes manual, magnetic, combination, and reversing starters for 110-550 volt motors. Contact your nearby A-C representative, or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-3715

ALLIS-CHALMERS

If you write maker identify as IEN - 13306

CUT SPRAYING COSTS with CO_2 POWERED GUN

NO HOSES • NO COMPRESSOR •
NO ELECTRICAL OUTLETS •
NOTHING EXTRA TO BUY!

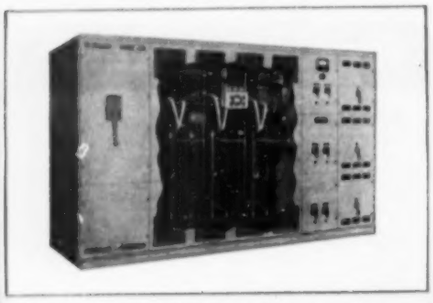
BECKER
PRESSURE-TYPE
SPRAY GUN
USED EXTENSIVELY IN FACTORIES, HOMES, FARMS, INSTITUTIONS

For:
- Paints
- Oils
- Varnishes
- Enamels
- Fire-Proofing
- Decorating

Handy for hundreds of industrial uses where expensive, heavy, cumbersome compressor type spraying is unnecessary. Becker Spray Gun is ruggedly built; heavy gauge (21 liquid oz.) steel container, cast aluminum head, brass and stainless inserts. Powerful CO_2 cartridges spray up to one container-full. See your Distributor or order direct, postpaid. Extra CO_2 cartridges at your dealer's or 10 for $1 postpaid.

SULLIVAN-BECKER CO., Dept. 192-M, Kenosha, Wis.

If you write maker identify as IEN - 13307



Wagner Unit Substation Transformers
for dependable load-center power distribution

Wagner three-phase dry-type load-center transformers are built in ratings through 2000 kva in the 15 kv class and below. Transformer and incoming line section are housed in compact factory-matched enclosures, designed for direct connection to matching secondary switchgear to form a closely coupled unit substation that is streamlined in appearance and readily accessible. Complete enclosure of all equipment assures safety against contact with live parts.

Bulletins TU-56 and TU-15 give full information on Wagner Dry-Type and Liquid-Filled Substation Transformers. Write for your copies.

Wagner Electric Corporation
6414 PLYMOUTH AVENUE
ST. LOUIS 14, MO.
152-6A
ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

If you write maker identify as IEN - 13308

END CAPS FOR CONDENSERS ...
HERMASEAL OFFERS THREE SIZES
TO FIT MOST NEEDS

When you need End Caps for Condensers that must meet *high quality* standards . . . yet cost is a factor . . . and, you need them in a *hurry* . . . call on Hermaseal!

HERMASEAL is a top specialist in Sealed Terminals, Sealed Headers, and allied parts for the radio-electronics industry.

COMPLETE CATALOG — Just off the press, a new catalog with descriptions and specifications for most of Hermaseal's stock Terminals and Headers. Write for your copy today! And let us quote you on your End Cap requirements. No obligation, of course.

Hermaseal
THE HERMASEAL CO., Inc.
Elkhart 25, Indiana

If you write maker identify as IEN - 13309

COMMUNICATING . . Amplifier for paging and sound distribution

Source: WEBSTER ELECTRIC CO.
1902 Clark St., Racine, Wis.

Details in Bulletin TEL-129

Model 89-50 and Model 91-50 are new 50 watt amplifier and booster watt amplifier, respectively, in the company's line of paging and sound distribution equipment. Model 89-50 has separate input and gain controls for three microphones and one phonograph pickup. It has separate base and treble tone controls and four speaker sockets. Receptacles are provided for circuit connections between amplifier and booster and a plug-in relay for paging use. Finish is in two-tone gray.

If you write maker identify as IEN - 13310

VENTILATING . . Centrifugal blower made of Lucoflex for corrosive fumes

Source: AMERICAN LUCOFLEX INC.
1 E. 57th St., Room 707, New York 22, N. Y.

For plating and chemical plants

The company announces addition, to its line of polyvinyl chloride sheet, rod and tube stocks, of a contract service through which it is prepared to manufacture centrifugal ventilating blowers employing the non-flammable rigid material Lucoflex. It is not subject to chemical attack. A typical assembly operates at 1,000 rpm. with 3-hp. input to handle 4,400 cfm. at a little under 4 in. of water.

If you write maker identify as IEN - 13311

EXTINGUISHING . . Fire shield permits close approach to a blaze

Source: GUSTIN-BACON MFG. CO.
1412 W. 12th St., Kansas City 7, Mo.

List is $75

Ultralite glass fiber insulation is mounted on a tube frame and is fitted with a peep hole at eye level shielded by copper wire that dissipates heat. A self-sealing opening can be cut through the shield for a hose nozzle from an extinguisher. The complete assembly weighs 26 pounds.

An operator can approach close to a blaze to direct extinguishing activity, to turn off valves, to rescue others or to fight the fire himself. The glass fiber is resilient. It will not dent, break or chip and is impervious to wetting.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . *See Page 80*

If you write maker identify as IEN - 13312

QUALITY ENGINEERING means QUALITY PRODUCTION

with the

PRESS-RITE

85 TON POWER PRESSES

featuring . . .
- *One Piece Frame*
- *Built-In Tie Rods*

Press-Rite's 85 ton giant is designed with a one piece frame and built-in tie rods which assures longer die life and increased tonnage. Has ample die area for large and bulky dies.

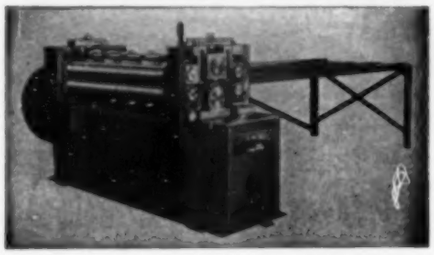
The Press-Rite Airflex Clutch and Brake System is designed to give long maintenance-free service and greater operator safety. These and numerous other features give you increased production with lower costs.

Examine the Press-Rite line. Let us send you Bulletin P552 today!

Sales Service Machine Tool Co. SSMT
PRESS RITE PRESSES - SHAPE RITE SHAPERS - KELLER POWER HACK SAWS
2365 UNIVERSITY AVENUE - ST. PAUL W4, MINNESOTA

If you write maker identify as IEN - 13313

RAFTER GANG SLITTER
For Lasting Accuracy



With or without feed rolls for the slitting of varied widths and gauges of metal. Machined and accurately ground cutter shafts made of high-grade carbon steel. Machine cut gears. Generous size bearings. Vertical adjustment of upper spindles allows regrinding of double edge type cutters. By removing two bolts, the end housing is drawn from cutter shafts permitting quick change of cutters. Spacer collars machined and marked for particular job, easily and simply removed for change over of various slitting widths. All features represent accuracy, speed and economy.

RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street Belleville 9, N. J.
COLD ROLL FORMING MACHINES
& PRESS BRAKE FORMING DIES

If you write maker identify as IEN - 13314

HINGES

Write for complete illustrated catalog of stock items.

Stocker Hinges are precision die-stamped from cold rolled steel.

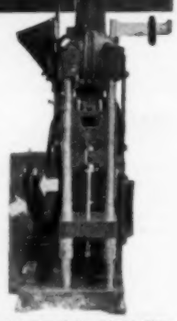
Full acting, 90-degree stop, continuous and butt styles, with or without holes. Plain or plated finishes.

Widely used for metal boxes and cabinets, fluorescent lighting fixtures and all sheet metal products requiring hinges.

The **STOCKER HINGE** *Mfg. Co.*
114 North Jefferson St.
Chicago 6, Illinois

If you write maker identify as IEN - 13315

CMH FLEXIBLE MACHINE TOOL CONDUIT
FOR SAFE, DEPENDABLE wiring under all conditions



Consisting of a rugged flexible metal hose liner with a durable synthetic cover, CMH Machine Tool Conduit meets the severest requirements for the wiring of all types of machinery. It is extremely flexible . . . liquid tight . . . unaffected by vibration . . . and has a smooth metal bore that prevents excessive abrasion. Sizes ⅜" through 2", cut lengths or mill lengths. May be used with standard rigid conduit fittings. Write for full details.

CMH
CHICAGO METAL HOSE
DIV. FLEXONICS CORPORATION
1333 S. Third Avenue, Maywood, Illinois
Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components.
In Canada: Flexonics Corporation of Canada, Ltd., Brampton, Ontario

If you write maker identify as IEN - 13316

A PAID NEWS ADVERTISEMENT BY AMERICAN BRASS CO.

FLEXIBLE CONNECTORS

Complete line of American Flexible Metal Connectors simplifies design problems

Operating under extreme conditions of vibration, pressure and heat, American Flexible Metal Connectors often offer the only solution to a tricky design problem. They may be used to replace a complicated maze of joints and fittings. For everything from jet aircraft to pants-pressing machines – designers are constantly finding new uses for them. Because they're made of *metal* and are *flexible*, they are ideal for carrying air, dust, gases, oil, steam, water, etc. Design engineers can use them to connect moving lines, protect wiring or delicate tubing, and to plan assemblies in cramped quarters.

• • • Available in various alloys and hose patterns, in long lengths or ready-to-use assemblies, complete with fittings attached.

Write for booklet SS-50 – complete information on American Flexible Connectors and their uses. The American Brass Co., American Metal Hose Branch, Waterbury 20, Conn. In Canada: The Canadian Fairbanks-Morse Company, Ltd.

wherever connectors must move American flexible metal hose and tubing

If you write maker identify as IEN - 13317

CHROMALOX gives you the *LOW COST* answer for

VARIABLE HEAT

NON-BREAKABLE INFRARED

SAFE OPERATION

CHROMALOX ALL-METAL *Electric* RADIANT HEATERS

The new and improved CHROMALOX heating principle gives ALL infrared heat advantages: high heat intensity, "color blind" infrared radiation, heat that's infinitely variable! You get more satisfactory results at reduced costs in baking, drying, curing, preheating and similar uses with CHROMALOX Radiant Heaters.

Write for FULL DATA

Tell us what you want to do with infrared heat and we'll send you data sheets covering your needs.

Industrial Div., EDWIN L. WIEGAND CO., 7305 Thomas Blvd., Pittsburgh 8, Pa.

CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

See Chromalox Electric Heating Units Advertisement, Page 8

If you write maker identify as IEN - 13318

EFFICIENCIES UP TO 98%

PHILADELPHIA SPIRAL BEVEL-HELICAL SPEED REDUCERS

For vertical or horizontal right angle drives where high efficiency and smooth dependable operation are desired, Philadelphia Spiral Bevel-Helical Reducers are widely preferred. They are available in single, double and triple reduction types in standard ratios from 1 to 1 up to 238 to 1. First reduction is always through spiral bevel gear set while precision shaved helical gears are employed in second and third reductions of double and triple types.

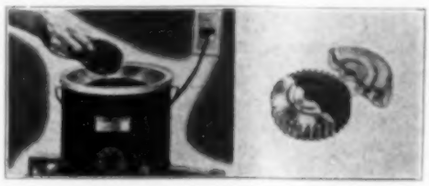
For details write for Catalog SB-50

PHILADELPHIA GEAR WORKS, Inc.
ERIE AVENUE AND G STREET • PHILADELPHIA 34, PA.
NEW YORK • PITTSBURGH • CHICAGO • HOUSTON • LYNCHBURG, VA.

If you write maker identify as IEN - 13319

CORROSION PROOFING . . Plastic for strippable coat on metal products

Source: FIDELITY CHEMICAL PRODUCTS CORP.
468-72 Frelinghuysen Ave., Newark 5, N. J.



Plastic is transparent and clear or amber

Dip-Pak trade names two new hot melt plastics into which metal products are dipped to pick up a protective coating for processing, shipping and storage. When the protection is no longer needed the coating can be cut and stripped clean from the metal surface. The removed plastic can be remelted and used again. Protected products do not show any sign of corrosion after 700 hr. of exposure to 100 per cent humidity at 105 deg. F. The two formulas are known as No. 595 and 597.

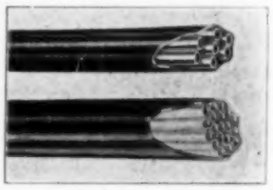
No. 595 is the tougher of the two. It has high tensile strength, good flexibility. It leaves a corrosion inhibiting oil film on the metal after it has been stripped. It is particularly suited to protect small tools, dies, gears, machined parts and coat flexible metal hose. No. 597 is tough, has good tensile strength and flexibility to protect small tools, dies, gears but not the toughness or flexibility of No. 595.

The company is prepared to supply thermostatically controlled electrically heated equipment to melt and hold the material. Tank capacities range from 1 pt. to 5 gallons.

If you write maker identify as IEN - 13320

CONDUIT . . Flexible, tube filled, for pneumatic and hydraulic controls

Source: SAMUEL MOORE & CO.
51 Moore St., Mantua, Ohio



Compact, corrosion proof

Metl-Cor and Poly-Cor are two new harness assemblies of ¼ or ⅜-in. metal tubes, or of polyethylene tubes with ⅛ in. bore, in an extruded sheath of black polyethylene plastic measuring $\frac{1}{16}$ in. in thickness. Both types constitute the Dekoron Impervapak harness to carry multiple independent circuits for hydraulic and pneumatic control instruments in an assembly that is easy to install.

Copper or aluminum tubes are enclosed in the plastic sheath in the Metal-Cor assembly in lengths to 50 feet. A standard line of pressure tight fittings joins successive lengths. The assembly is available with 4, 7, 10, 14 or 19 tubes as standard.

Poly-Cor is supplied in coils measuring 500 to 1,000 ft. in length. It also includes pressure tight fittings for end assembly. This design is available with 4, 7, 10, 14 or 19 tubes measuring ¼ in. in outside diameter and carrying a ⅛-in. bore. Individual tubes are color coded for line identification and will carry any standard instrument line pressure.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . *See Page 80*

If you write maker identify as IEN - 13321

CUT IDENTIFICATION COSTS

with BRADY Printed Self-sticking ROLL TAPES

SAVE OPERATORS TIME • ELIMINATE WASTE MOTIONS • GET QUICK, POSITIVE IDENTIFICATION

Label parts, pieces, assemblies, materials, etc., with Brady Printed Tape. Sticks to any clean, dry surface without moistening. Applied by hand or automatic dispenser.

Any wording, numbers, letters, trademarks or symbols printed to your order on cellophane, acetate fibre, paper or cloth tapes to fit your job requirements.

Choose from a variety of standard colors, roll lengths and widths.

WRITE FOR Free SAMPLES AND USEFUL CATALOG

DISTRIBUTED IN 125 PRINCIPAL CITIES

MANUFACTURERS OF SELF-STICKING PRODUCTS

W.H. BRADY COMPANY

769 W. GLENDALE, MILWAUKEE 12, WISCONSIN

If you write maker identify as IEN - 13322

Machine bundling small size packages for the Squibb Co.

Bundle your packages by machine—and SAVE!

A modern bundling machine enables you to replace hundreds of cardboard boxes or fibre containers with a single economical roll of kraft paper. The machine bundles a dozen or fewer cartons at speeds of up to 24 bundles a minute. Only one operator is needed. These neat, sturdy bundles weigh less—cost less to ship. And dealers like them since they're easy to store.

Machine automatically applies end seals. It's easily adjusted for different sizes. Can be equipped with a special assembling unit which groups packages in the desired arrangement.

Write to our nearest office for complete information.

• WRAPPING DIVISION •

PACKAGE MACHINERY COMPANY
SPRINGFIELD, MASSACHUSETTS
NEW YORK · CHICAGO · BOSTON · CLEVELAND · ATLANTA · DALLAS · DENVER · LOS ANGELES
SAN FRANCISCO · SEATTLE · VANCOUVER, WASH. · TORONTO · MEXICO, D.F.

If you write maker identify as IEN - 13323

NEW J.I.C. STARTERS

STOCKED IN NEMA SIZES 1, 2, 3

For machine tool control

New Ward Leonard non-reversing, magnetic, combination starters of the fusible or non-fusible type are designed and built in accordance with J. I. C. standards.

Fusible type starters fulfill N. E. C. requirements for motor branch circuit over-current protection, disconnecting means, motor-running over-current protection and motor controllers.

Non-fusible type starters meet these same requirements with the exception of motor branch circuit protection.

These starters are recommended for use where a magnetic across-the-line starter coupled with disconnect means at starter location is specified and where the control equipment must be protected against oils or coolants.

On special order, multi-motor and reversing starters to J. I. C. standards can be supplied.

Write for J. I. C. Combination Starter Bulletin 4120. WARD LEONARD ELECTRIC CO., 33 South Street, Mount Vernon, N. Y. Offices in principal cities of U. S. and Canada.

WARD LEONARD ELECTRIC CO.
Reliable Engineered Controls Since 1892
RESISTORS • RHEOSTATS • RELAYS • CONTROL DEVICES

If you write maker identify as IEN - 13324

Now Spray On design layout ink

"JUST PRESS THE BUTTON ON THE CAN"

Faster! Easier!

No brush, no waste, no mess! Self-pressurized can sprays on CROWN Design Layout Ink in fine mist that dries to hard surface in a minute. Dark blue is standard—other colors on volume purchases.

ORDER TODAY!

$1.59 PER 12-OZ. CAN

15% discount in cases of 12

Additional discount for larger quantities

FOB Sycamore (Illinois)

CROWN INDUSTRIAL PRODUCTS CO.
402 Borden Ave., Sycamore, Ill.

Please ship at once

_____ (how many?) cans

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CROWN Design Layout Ink

Name_____

Company_____

Our Purchase Order No._____

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City_____ Zone____ State_____

If you write maker identify as IEN - 13325

INDUSTRY HAS NEVER SEEN ANYTHING LIKE IT!

Characteristics And Recommended Usage For Natural And Synthetic Rubber Polymers, And Complete Design Data On Mechanical Rubber Specialties!

LAVELLE Rubber Company

1811 WEST HUBBARD STREET • CHICAGO 22, ILLINOIS

If you write maker identify as IEN - 13326

• With every press on foot pedal Model 214 Chicago Double Rivet Setter automatically feeds, inserts and clinches two rivets. 14 inch throat accommodates large assemblies. Handles 3/32" diameter or smaller steel tubular rivets lengths to 3/4". Quick Change Rotary Type Hoppers and Raceways permit 5 minute changeover to rivets of different size. Adjustable anvils and riveting centers add to versatility. For help with fastening problem . . . send sample assembly (or a blue print) for free fastening analysis.

FREE CATALOG contains valuable engineering information and rivet specifications plus illustrated descriptions of 26 Chicago Automatic Rivet Setters.

Chicago Rivet & MACHINE CO.

9602 West Jackson Boulevard, Bellwood (Chicago Suburb) Illinois

Branch Factory: Tyrone, Pa.

If you write maker identify as IEN - 13327

Reduce Machine Noise and Vibration 60%-85%!

ANCHOR MACHINES ON **UNISORB®**

Yes, and UNISORB machine-mounting requires no bolts . . . no lag screws . . . no destructive floor-drilling. It's the modern way to anchor machines . . . saves installation costs . . . lasts for years and years with no maintenance . . . easy to replace . . . prevents vibration damage to floors, buildings and machinery.

Today, write for your free copy of "Why It Pays To Anchor Your Machines with UNISORB."

The FELTERS Company

210-I SOUTH STREET

BOSTON 11, MASS.

If you write maker identify as IEN - 13328

CLAMP . . Screw operated unit for fixture, retracts to clear work

Source: CENTINELA INDUSTRIAL SUPPLY CO.
11928-32 Inglewood Ave., Hawthorne, Calif.

Quick acting

New design in the company's line of work holding clamps, previously described IEN-4263, employs a tightening screw that operates in a nut which forms part of a trunnion block. This block is backed by two lock recesses in the main frame of the clamp so the holding jaw can be forced down upon the work. It permits complete release of the screw after it has been loosened so the jaw can be drawn back to clear work in the fixture. Two sizes provide 3 and 6-in. throat depths. Parts are made of steel with black oxide finish. Cadmium plating or electro zinc finish can be specified.

If you write maker identify as IEN - 13329

TRUCK . . Four wheel hand unit mounts a steel load carrying bin

Source: LANSING CO.
600 N. Cedar St., Lansing 12, Mich.

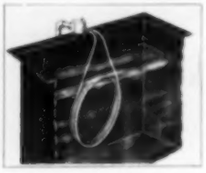
For general use

The bin body on this new hand truck is made of 14-gage steel. It measures 42 by 26 by 22 inches. Beneath the body are two rigid and two swivel casters with wheels that can be specified in rubber, plastic or semi-steel. All include roller bearings. A tube handle completes the assembly. Finish color can be specified on orders of 10 or more.

If you write maker identify as IEN - 13330

HEATING . . Electric element for immersion in electro-plating bath

Source: EDWIN L. WIEGAND CO.
7505 Thomas Blvd., Pittsburgh 8, Pa.



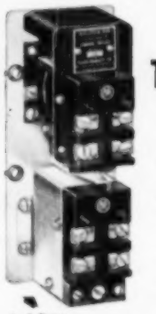
List price $52.50

Chromalox CTL is a new lead sheathed immersion heater that resists corroding action of copper, chromium and nickel plating solutions without contaminating the solutions themselves. It is made in the form of a loop terminating in a connection box and is hung over the side of a plating tank as shown in the illustration. Dimensions are 3 by 16 by 27 inches. Rating is 5 kw. on 220-volt input. Thermostat control can be specified when required by the user.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13331

BULLETIN 849



A-C Timer with Auxiliary Contacts

D-C Timer

PNEUMATIC TIMING RELAY

Good for Millions of Operations

- For "dash up" or "dash down" operation
- Available for NEMA Type 1, 4, 7, and 9 applications

This new, compact, solenoid type, pneumatic timing relay utilizes a synthetic rubber bellows for controlling the tripping time. Has a range of from 10 cycles to 3 minutes, and an accuracy of approximately 10%. Its setting is easily adjustable over a wide range, and the relay resets instantaneously. This timer will provide satisfactory operation irrespective of temperature, humidity, or vibration conditions. Write for information. Allen-Bradley Co., 1312 S. Second St., Milwaukee 4, Wis.

ALLEN-BRADLEY

QUALITY

MOTOR CONTROL

If you write maker identify as IEN - 13332

Need Rails—Switches—Frogs—Guard Rails or Track Tools? For best selections and prompt deliveries—try FOSTER—shipments of most items can be made from stocks in our five nationwide warehouses.

RAILS—New and Relaying Foster stocks are being replenished daily. Any items we did not have last week, we'll probably have next week. We match specifications and sizes to meet all your requirements on any job, new installations or replacements. *Call on Foster for all your needs for Industrial Track Equipment and Supplies.*

Write for Track Equipment Bulletin IE-12.

L.B. FOSTER CO.

CHICAGO 4, ILL. HOUSTON 2, TEX.
PITTSBURGH 30, PA. NEW YORK 7, N.Y.

If you write maker identify as IEN - 13333

Just 1/32" (pinhole size) faucet leak

MUSHROOMS into ATOMIC WASTE

of approximately 95,000 gallons of water yearly—costing:

$24.14

@ $1.90 per M cubic feet

If a hot water faucet, then actual FUEL WASTED heating 95,000 gallons costs approximately:

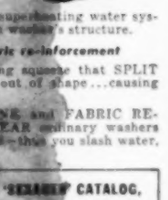
$59.91 if coal (9970 lbs.)
$91.06 if oil (792 gals.)
$84.41 if gas (84,415 cu. ft.)

Above figures authenticated by Hackensack Water Co. and American Gas Association.

STOP this needless WASTE during today's MATERIAL and MANPOWER shortages with "SEXAUER" "Easy-Tites" that outwear ordinary faucet washers 6-to-1; thus SAVING labor on 5 REPEAT repairs, PLUS water and fuel, while prolonging the life of SCARCE fixtures.

PAT'D.

"EASY-TITE" Faucet washers



...a modern laboratory triumph, are compounded from du PONT NEOPRENE (tested up to 300°F.) instead of rubber—to withstand DESTRUCTIVE HEAT common in present-day superheating water systems—that formerly broke down washer's structure.

Built like a tire with fabric re-inforcement

they resist the grinding, closing squeeze that SPLIT and MUSH ordinary washers out of shape...causing LEAKS.

Through combining NEOPRENE and FABRIC RE-INFORCEMENT they OUTWEAR ordinary washers 6-to-1 on hot or cold FAUCETS—thus you slash water, fuel and labor costs.

THE NEW "SEXAUER" CATALOG,

Edition G, just out pictures over 2500 TRIPLE-WEAR plumbing REPAIR parts and Pat'd. Precision Tools. It's today's accepted buying guide for discriminating purchasing and maintenance personnel among thousands of top PLANTS, INSTITUTIONS and GOVERNMENT AGENCIES that rely on SEXAUER repair materials. *Send for your copy today!*

Then too, there's a SEXAUER TECHNICIAN within quick call from coast-to-coast, who offers a special SURVEY service that sets up a schedule of the exact replacement parts required for your particular plumbing fixture requirements of make or age and *without obligation.*

A postcard will bring him and your new Catalog promptly.

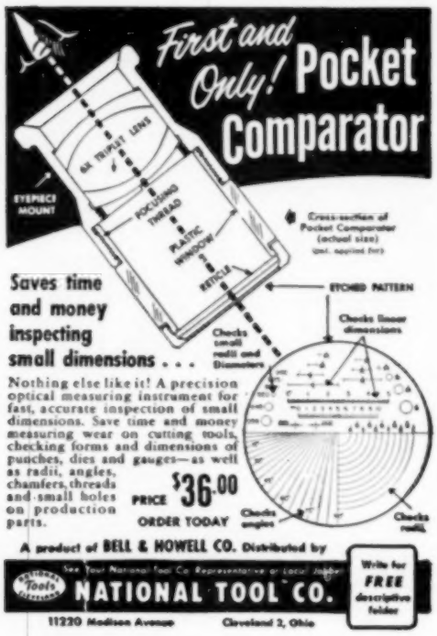
J. A. SEXAUER MFG. CO., INC., Dept. K-122
2503-05 Third Avenue, New York 51.

as advertised in THE SATURDAY EVENING POST

SEXAUER

WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

If you write maker identify as IEN - 13335



Saves time and money inspecting small dimensions . . .

Nothing else like it! A precision optical measuring instrument for fast, accurate inspection of small dimensions. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as radii, angles, chamfers, threads and small holes on production parts.

PRICE $36.00
ORDER TODAY

A product of BELL & HOWELL CO. Distributed by

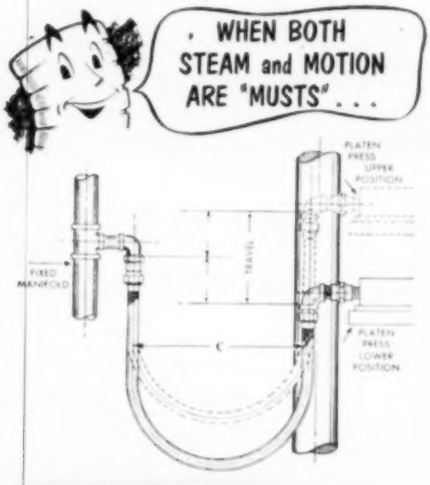
See Your National Tool Co. Representative or Local Jobber

NATIONAL TOOL CO.

Write for FREE descriptive folder

11220 Madison Avenue Cleveland 2, Ohio

If you write maker identify as IEN - 13336



Use Only UNIVERSAL Flexible Steam Connections

They're tough—flexible and economical. Widely used for movable platen presses, tire molds, laundry pressing machines and similar equipment requiring flexing many times per hour. Available in lengths to your specifications and equipped with heat-proof male and union female connectors as required.

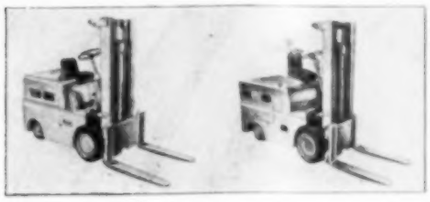
Write for Catalog U-101 and data sheet showing proved method for installing Universal Seamless Flexible Metal Hose in vertical loops.

UNIVERSAL METAL HOSE CO.
2131 S. Kedzie Avenue • Chicago 23, Illinois

If you write maker identify as IEN - 13338

TRUCK . . Engine or motor drive, fork lift design, 3 and 3½ ton

Source: CLARK EQUIPMENT CO.
Battle Creek 49, Mich.



Illustrated specifications upon request

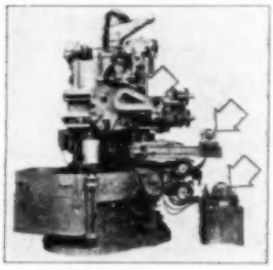
Two new trucks, one with engine and the other with motor drive, have been added to the company's Utilitruc line of fork lift trucks. Both feature a new fork mounting designed for interchangeability of attachments and devices between various makes of trucks with comparable capacity. Both the 3 and 3½-ton assemblies provide for a load lift to 118 in. above the floor with 25 in. of free lift and an overall height of 83 in. when the forks are in lowered position.

The engine compartment and the motors and controller are in accessible position for inspection and servicing. The 3-ton assembly operates in 75½ in. intersecting aisles. The 3½ ton truck will operate in 78 in. aisles. Travel speed is to about 6 mph. based on a 36-volt battery with the motor driven truck. It is to a little over 7 mph. with the engine drive. The engine rates 50 hp. at 1,800 rpm.

If you write maker identify as IEN - 13339

CONTROL . . Tracer attachment for automatic contour machining

Source: TURCHAN FOLLOWER MACHINE CO.
8257-61 Livernois Ave., Detroit 4, Mich.



Accurate to 0.001 inch

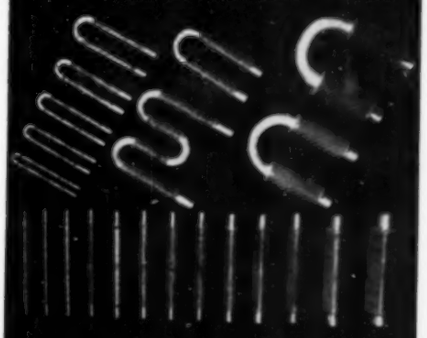
New assembly of the company's hydraulic control equipment has been applied on a Niles vertical boring mill to adapt the machine to automatic contour boring and turning. For this purpose the vertical slide is equipped with a hydraulic cylinder operated from a control panel for rapid traverse approach, to be followed by predetermined variable feed. Working with this vertical cylinder is a second one, set at an angle, for actuation through the template controlled follower to add increments of horizontal feed in step with the vertical feed to produce a desired contour.

Hydraulic pressure is supplied by a Vickers motor driven pump and hydraulic reservoir leading to the power cylinders through the follower control. By means of roughing and finishing tools on the 4-way turret tool block it is possible to take both cuts without altering the control adjustments.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13340

RO-FIN TUBES
IDEAL SURFACE FOR HEAT TRANSFER



Over 100 sizes in production!

ROME
TURNEY RADIATOR COMPANY

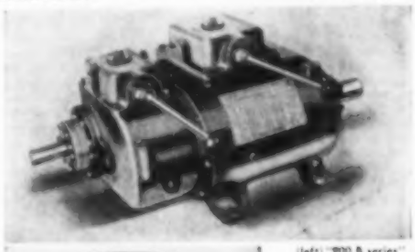
200 East Front Street • Rome • New York

If you write maker identify as IEN - 13341

WESTERN "SUPER" with 8 SPEED CHANGES

For use on large lathes, boring mills, chemical and rubber machinery, etc., and used for replacement of gear boxes on large radial drills. CAPACITY 50 HP.

(In geometric progression of 1.29 (total reduction of 6:1)



(left) "900 B series" has a 5 hp. capacity with input speed of 900 r.p.m. . . . 4 gear changes are available through one shift lever automotive type). Ratios — 1:1, 2:1, 3:1, 4:1.

On special machines where transmissions are required — a standard WESTERN model can often be adapted to give the required spindle speeds . . . and even when modifications are made, a WESTERN for the basis of the design greatly simplifies the problem. Similar transmissions of 10 hp. capacity are available . . . we can supply the necessary V-belts, sheaves, output pulleys, and motors from stock.

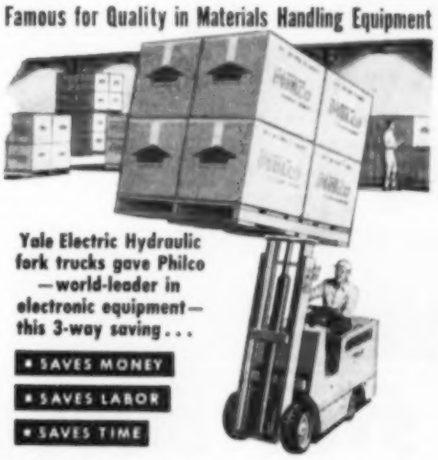
up to 100 h. p.

WESTERN TRANSMISSIONS

If you write maker identify as IEN - 13342

Philco Famous for Quality the World Over **Cuts Costs** with **Yale Electric Trucks**

Famous for Quality in Materials Handling Equipment



Yale Electric Hydraulic fork trucks gave Philco —world-leader in electronic equipment— this 3-way saving . . .

- SAVES MONEY
- SAVES LABOR
- SAVES TIME

What business are you in? Food-processing, motor freight-terminal operation, textiles, lumber, tool-making? Whatever it is—you *must* move materials from one point to another. **Yale materials handling equipment** . . . is accounting for 50 to 75% savings in many businesses today — businesses that never realized how costly their old-fashioned handling methods were. Yale is the world's leading manufacturer of materials handling equipment. You can depend on Yale — to give expert attention to your specific handling needs.

YALE
MATERIALS HANDLING EQUIPMENT

YALE is a registered trade mark of The Yale & Towne Manufacturing Co.

MAIL THIS COUPON TODAY

The YALE & TOWNE Manufacturing Co., Dept. 3612
Roosevelt Blvd. and Haldeman Ave., Phila. 15, Pa.

I want to know how Yale Materials Handling Equipment can help me.
☐ Please have your local Representative call.
☐ Please send free copy of THE PICTURE STORY OF YALE MATERIALS HANDLING EQUIPMENT.

Company _____
Name _____ Title _____
Street _____ City _____ State _____

In Canada write: The Yale & Towne Mfg. Co.
Box 337 - Postal Station "A", Toronto

GAS AND ELECTRIC INDUSTRIAL TRUCKS • WORKSAVERS
HAND TRUCKS • HAND AND ELECTRIC HOISTS • PUL-LIFTS

If you write maker identify as IEN - 13344

Rolling Steel Doors

Manually, Mechanically, or Power Operated

Below you see Mahon Power Operated Rolling Steel Doors installed in six truck openings to a motor freight loading dock. Another Mahon Power Operated Rolling Steel Door 17'-0" x 22'-0" is installed in a railroad opening in connection with this same loading dock. Rolling Steel Doors occupy no usable space either inside or outside the opening . . . they create no overhead obstructions—cranes may be employed to handle materials adjacent to the door opening. Quick opening, quick closing, vertical roll-up action saves valuable time . . . all-metal construction provides permanence, greater protection against intrusion and fire, and insures you a lifetime of trouble-free service. Write for Catalog containing complete information including Specifications.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

If you write maker identify as IEN - 13345

Ancient EGYPTIAN Engineers Developed the FIRST Conveyors

Reputedly, the Pharaohs' great engineers solved their problems for conveying huge stone blocks, used in construction of the Pyramids, by having thousands of slaves "trolley" these tremendous stones from the Nile over hollow lubricated logs. Nowadays, materials handling is made more efficient, speedy and labor saving because . . .

JERVIS B. WEBB COMPANY was the FIRST to Develop the Triple Labyrinth SEALED TROLLEY the Power behind REGULAR TROLLEY and POWER AND FREE CONVEYORS

The Webb "Red Seal" Trolley has been an outstanding success since its introduction. The fundamental design included flangeless hardened steel wheels, improved tread contour, retainer type ball bearings and hardened steel axle rods. It showed its superiority in varied services, in hundreds of installations. The present "Red Seal" design offers many improvements listed here: placing it far out in front.

1. TRIPLE LABYRINTH SEAL. Three walls of steel to keep the lubricant in and the dirt out.
2. HARDENED STEEL WHEELS. Contoured to fit the flange of the I-beam on which they ride.
3. LARGE ALLOY STEEL BALLS. Eight 15/32". Highest quality alloy steel balls operate in a deep groove retainer type bearing. Due to the lower friction with retainer type bearings the life is longer.
4. PRECISION GROUND RACES. Large diameter. Ground to precision specifications — less friction.
5. STURDY DROP-FORGED BRACKET. The wheel is firmly swaged to the bracket, eliminating loose rivets or bolts, making the wheel and bracket an integral unit.

The A. No. 3317 Swinged Trolley, shown, has no bolts, pins or nuts, and like all Webb Trolleys is swinged for pressure and lubrication.

CONVEYOR ENGINEERS AND MANUFACTURERS
JERVIS B. WEBB COMPANY
8115 ALPINE AVE. DETROIT 4, MICH. — OFFICES IN PRINCIPAL CITIES
FACTORIES IN DETROIT . . . LOS ANGELES . . . HAMILTON, ONT.

If you write maker identify as IEN - 13346

STOP DUST

INSTANTLY with DUSTKOP

DUSTKOP 1400 cfm.

DUSTKOP 5000 cfm.

300 cfm to 10,000 cfm per unit (22 models)

Standard pre-tested, available from stock. Ask for catalog 605-2. Describe dust problem for recommendation by return mail. No obligation.

AGET-DETROIT CO.
401 Main Street
ANN ARBOR, MICH.

If you write maker identify as IEN - 13347

TESTING . . Portable X-ray rates to 3½ in. thickness in steel

Source: GENERAL ELECTRIC CO.
4853-57 Electric Ave., Milwaukee 14, Wis.

It goes inside

Resotron 250 is a new portable X-ray that is designed for operation from a wheel mounted power unit measuring 4 by 6 by 4 feet. The tube head measures 15 in. in diameter by 44 in. in length and weighs 150 pounds. It is fitted with carrying handles near the two ends that also act as wheel rims to permit rolling the head into position. X-rays are emitted from a protruding end at 90 deg. to the housing axis. Rating is 250,000 volts. The "window" of the X-ray tube is made of beryllium copper.

If you write maker identify as IEN - 13348

FASTENINGS . . Fixture studs for work setup on a machine table

Source: NORTHWESTERN TOOL & ENGINEERING CO.
124 Hollier Ave., Dayton 3, Ohio

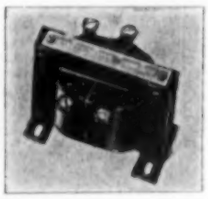
Available from stock

A new line of studs, measuring 2 to 20 in. in length and in a range of diameters from 5/16 to 1 in., has been added to the company's line of special fastenings previously described IEN-5674-52. The new units are suited for use in work and tool setup on machine tables and at layout benches.

If you write maker identify as IEN - 13349

TRANSFORMER . . For control circuit rating 30, 50, 150 va. on 110 volt ac.

Source: HEVI DUTY ELECTRIC CO.
4210-14 W. Highland Blvd., Milwaukee 1, Wis.



Ask for Bulletin T-5111

Three new sizes have been added to the company's line of control circuit transformers. All are available from stock with rating at 30, 50 and 150 va. to operate on 240/440-volt ac. input and to provide output at 110 volts on 50/60-cycle circuits. The three new units add to the 250 va. and the 10 kva. assemblies previously developed in the line.

Screw type terminals are part of the standard assembly. Coil leads are soldered to the terminals and taped to the coil, in the winding operation, to prevent breaking the leads when the transformer is subjected to vibration. Slotted mounting lugs assist in installation. A terminal indicating name plate is attached to each unit.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 13350

SPEED PRODUCTION • CUT COSTS ELIMINATE SHRINKAGE...

Investigate the Joyal

Resistance Spot Welding & Soldering Machines

Models 1000 WV, 2000 WV & 5000 WV—AC only

For hard soldering, soft soldering and spot welding precious and dissimilar metals. Spot welds steel parts up to 3/16 of an inch thick; welds brass up to .080"; solders brass up to ¼ of an inch. Has myriad applications in small metal parts production.

Write for catalog of complete line.

JOYAL PRODUCTS, INC. 560 BELMONT AVENUE NEWARK, 3, N. J.

If you write maker identify as IEN - 13351

CESCO RIGHT... before your Eyes!

CHICAGO EYE SHIELD COMPANY • 3206 Warren Blvd. • Chicago 13, Ill.

CESCO FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Detroit, East Orange, Houston, Kansas City, Knoxville, Little Rock, Los Angeles, Mexico City, D. F., Milwaukee, Montreal, Philadelphia, Pittsburgh, Salt Lake City, San Francisco, Spartanburg, St. Louis, St. Paul, Toledo, Tulsa

If you write maker identify as IEN - 13352

FOR MATERIAL HANDLING— more and more—the swing is to wide-base pneumatic tires

GENERAL

INDUSTRIAL PNEUMATIC TIRES

More Designers are specifying wide-base General Pneumatics. They know Generals add these extra selling points to handling equipment.

SAVE TIME • MONEY • LABOR

- MORE LOAD CAPACITY AT LOW OR HIGH SPEEDS
- CUSHION EQUIPMENT AND LOADS REDUCING BREAKAGE AND SPILLAGE
- SAVE HIGH COST FLOORS AND FLOOR SURFACES
- SLOW, EVEN WEAR FOR LONG SERVICE
- HIGH FLOTATION FOR EASIER ROLLING OVER SOFT GROUND
- ROLLS EASIER, SMOOTHER OVER ALL SURFACES

Available separately or in assemblies of Tires, Tubes and Wheels. Size O.D. 8" to 27"—200 to 4000 lbs. cap. for low or high speeds.

THE GENERAL TIRE

Rigid CASTER FORKS Swivel

Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

SEND FOR CATALOG . . . DEPT. 6

THE GENERAL TIRE & RUBBER CO. AKRON, O.

If you write maker identify as IEN - 13354

Ametron Recording Counter

Consists of two basic electrical circuits, both normally open. Momentary closure of the counting circuit advances indexing device one step. Momentary closure of print circuit causes unit to print accumulated count. Automatic reset to zero available if desired. A wide variety of timing mechanisms available as standard equipment.

This unit may also be furnished to record elapsed time in these increments: 1/10 minute, 1/100 minute, 1 second and 1/10 second. Counting unit may also be equipped for direct drive from a rotating shaft to count revolutions in units of one tenth. Write for circular SC 12.

• THE STANDARD OF ACCURACY SINCE 1888 •

STREETER-AMET COMPANY
4101 RAVENSWOOD AVENUE • CHICAGO 13, ILLINOIS

If you write maker identify as IEN - 13355

Timely Facts and Features You'll Find in the NEOPRENE NOTEBOOK

- how you can reduce maintenance costs
- ways to solve many production problems
- new ideas on neoprene's wide range of uses
- technical help in specific applications
- details of new improvements in old products
- interesting new neoprene products

YOU'LL FIND PROFITABLE READING in every issue of the Neoprene Notebook. Each issue is packed from cover to cover with new ideas to save you time, trouble, and money. Put your name on our mailing list. Subscriptions are FREE.

Clip this coupon and mail it today.

E. I. DU PONT DE NEMOURS & CO. (INC).
Rubber Chemicals Division, D-12
Wilmington 98, Delaware
Please send me free issues of the Neoprene Notebook.

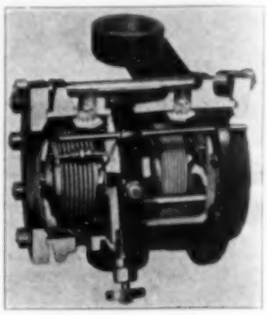
Name_____
Position_____
Firm_____
Address_____

NEOPRENE
The rubber made by Du Pont since 1932
DU PONT

If you write maker identify as IEN - 13357

METER . . Differential pressure unit available in 50, 100, 200 in. ranges

Source: AMERICAN METER CO.
1521-25 Race St., Philadelphia 3, Pa.



Over-pressure protected

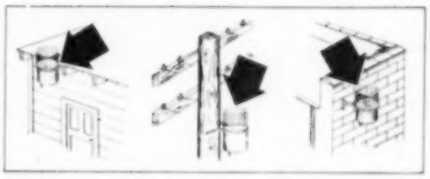
Illustrated is the operating mechanism in the company's new Dri-Flo recording orifice meter in which opposed stainless steel bellows connect to the high and low sides of an orifice to actuate an indicator drive in terms of pressure differential. The meter is designed for working pressure to 1,000 lb. and for ambient temperature between minus 25 and plus 175 deg. F. Integral with the operating mechanism is a bracket-mounted threaded connection for pedestal, panel or overhead hanger installation.

Operating range can be changed after removing a cover plate from the right hand low pressure side of the mechanism for access to the range spring. The operating shaft rotates through a 22-deg. arc. It employs a Teflon seal that requires no lubrication and eliminates possibility of the shaft freezing or leaking. A pulsation dampener in the partition between the two bellows is also Teflon sealed. The mechanism mounts at the back of the recorder housing which encloses a motor or spring driven circular chart measuring 12 in. in diameter. Overall dimensions are about 13 by 14 by 20 inches.

If you write maker identify as IEN - 13358

CONTROL . . Snowfall detector to actuate outdoor de-icing heaters

Source: MOTOROLA INC.
4543-47 W. Augusta Blvd., Chicago 51, Ill.



For sidewalks, track switches, antennas

Snow Detector is a new electronically operated unit equipped with an integral heater to melt ice and snow collected in the detector bowl when ambient temperature is below 37 deg. F. The resulting water is employed to close a circuit rating to 30 amp. on 110-volt ac. to de-icing heaters. The circuit remains closed until icing hazard no longer exists.

The assembly measures 7¼ in. in diameter. It is fitted with vertical rods around its upper rim to prevent birds from nesting in it. It remains inactive at temperatures above 37 deg. F. so no power will be consumed and the de-icing heaters will not be actuated when not required.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 30

If you write maker identify as IEN - 13359

If you write maker identify as IEN - 13360

NEW SQUARE D REVERSING DRUM SWITCH

WITH A LOT OF IMPORTANT FEATURES

Compact Size • Large Screw type Terminals • Replaceable Terminal Blocks • Convertible from Maintained Position to Spring Return • Positive Shock-proof Indexing • Single Captive Cover Screw • Generous Wiring Space • Two ½" Conduit Openings at Bottom • Front or Rear Handle Operation • Large and Legible Nameplate

Write for Bulletin 2601-A, Square D Company, 4041 N. Richards St., Milwaukee 12, Wis.

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN - 13361

NEW MASKING METHOD

for SPRAY PAINTING • PLATING • SAND BLASTING

PRE-CUT SELF-STICKING **QUIK-MASKS**

Hundreds of plants now using Brady QUIK-MASKS are saving time and money **by completely eliminating** costly hand work, use of stop-off materials and metal shields. QUIK-MASKS are **pre-cut to the exact size and shape you need.** Protect name plates, machined parts, plated and polished sections, holes, threads, etc., from paint, plating and cleaning solutions, oils, acids and sand blasting.

QUIK-MASKS are pre-cut from special "SCOTCH" brand plating and masking tapes. They stick without moistening—are quickly applied and removed. Circles, squares, rectangles, hexagons, letters and numerals stocked in many sizes. Nameplates and other specials made to your exact requirements.

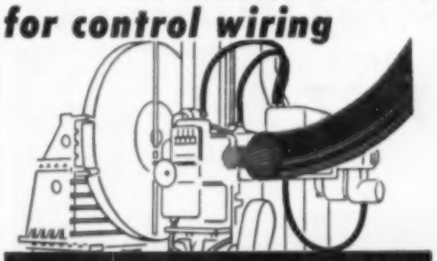
FREE SAMPLES

DISTRIBUTORS IN OVER 125 PRINCIPAL CITIES

MANUFACTURERS OF SELF STICKING PRODUCTS
W. H. BRADY COMPANY
706 W. Glendale, Milwaukee 12, Wis.

If you write maker identify as IEN - 13362

for control wiring



...OKOLITE-OKOPRENE

Keep your electrical circuits *strong*, free from weak spots which may disrupt production. On control wiring, and throughout your plant circuits, specify Okolite-Okoprene wires and cables. Here's why:

Moisture resistant Okolite Insulation is designed for continuous power loads, three shifts per day, year after year.

Flame resistant Okoprene Sheath protects against abrasion, heat, mechanical damage, oils and acids.

Insulation and sheath are applied by Okonite's strip process and vulcanized in a metal mold, giving greater stability and longer life to both. Write for Bulletin IE-1053, The Okonite Company, Passaic, N. J.

The best cable is your best policy

OKONITE *insulated wires and cables*

If you write maker identify as IEN - 13363

The Cambridge Recording Gas Analyzer continuously analyzes and records as many as six constituents of a gas. Eliminates intermittent, slow and expensive manual gas analysis. Accurate . . . Sensitive . . . Simple. No moving parts; utilizes thermal conductivity principle.

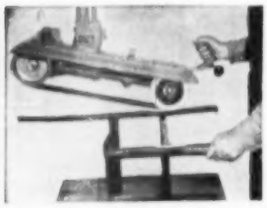
Makes possible substantial savings in the operation of kilns, production of inert gases, and in metallurgical, petroleum, and other chemical processes. Single- and Multi-point instruments are available for a wide variety of applications.

Send for literature mentioning application

CAMBRIDGE
INSTRUMENT COMPANY, INC.
3710 Grand Central Terminal, New York 17

Pioneer Manufacturers of
PRECISION INSTRUMENTS

If you write maker identify as IEN - 13364



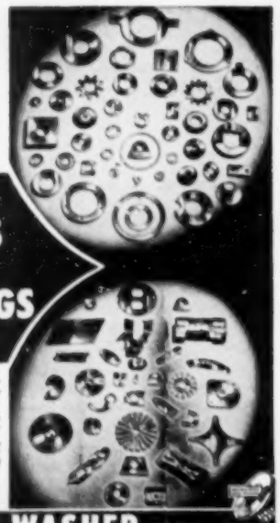
FOR THE FINISHING TOUCH

You can't beat this new 6-72 Vonnegut Abrasive Belt Grinding and Polishing Machine for cutting weld seams and burrs, removing finish blemishes, etc. Light—but rugged . . . and well balanced . . . easily manipulated when arranged as a *swing machine*. It also can be supplied as a *floor stand* or as a *lathe attachment*. Because of its great versatility, the machine has proved its value for "special" applications too—and it may suggest an entirely new application in your plant. If so, write us about it—we'll be glad to help you solve the problem and supply the details for efficient production. Send for Bulletin No. 62.

Grinding and Polishing Machinery Corp.
SUCCESSORS TO VONNEGUT MOULDER CORPORATION
1827 MADISON AVE., INDIANAPOLIS 25, U.S.A.

If you write maker identify as IEN - 13365

Serving **INDUSTRY**
SINCE
1887



WASHERS and STAMPINGS

Standard and Special Washers, of every description, any material, any finish, utilizing more than 22,000 Sets of Dies.

Let us Quote on Your Needs.

WROUGHT WASHER MFG. CO.
THE WORLD'S LARGEST PRODUCER OF WASHERS
2207 SOUTH BAY STREET • MILWAUKEE 7, WISCONSIN

If you write maker identify as IEN - 13366

CHUCK . . Applies stub drills in multiple spindle machine heads

Source: EX-CELL-O CORP.
1202 Oakman Blvd., Detroit 32, Mich.

Drill and shank sizes as specified

The body of this new collet chuck is equipped with an integral taper shank and carries a nut, at the shank end, that can be threaded off the body to apply pressure when the chuck is to be removed from a spindle. The forward end carries a second and larger nut that encloses the holding end of a collet. It applies pressure on the collet to close it in against the straight shank of a stub drill.

The collet carries a milled recess on its face to take a U-shaped driving key. This key engages notches, ground in the shank of the drill, for positive drive and to prevent the drill from being pushed back into the collet under feeding pressure.

The chuck assembly is in production in the company's Continental Tool Works Division. It uses drills sufficiently short so guide bushings are not required. It is available to specification for a range of drill diameters.

If you write maker identify as IEN - 13367

SWITCH . . Snap-acting design for vehicle use, 10 amp. on 28 volt dc.

Source: CONTROL PRODUCTS INC.
304-8 Sussex St., Harrison, N. J.

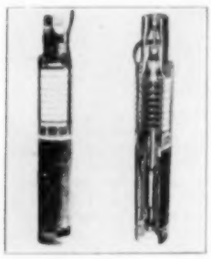
Please note our error

We were in error when we referred to the company's new switch, IEN-12805-52, as a foot operated design. Actually it is for toggle or pushbutton operation, not foot.

If you write maker identify as IEN - 13368

PUMP . . Multi-stage centrifugal for wells to 75 ft. in depth or more

Source: UNIFLOW MFG. CO.
Kuebler & Lake Ave., Erie, Pa.



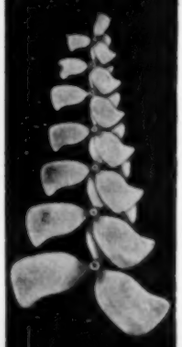
The Diver

An enclosed motor is direct connected to the impeller shaft of this new pump and the assembly is sealed in a tube to be lowered into a well for suspension from its delivery line. The pump is available at present in ¾ and 1½-hp. sizes. It stands in submerged position in the well so no priming is required. Its anti-friction bearings are permanently lubricated. A check valve is located at the upper end of the assembly just below the connection for the delivery line. Operation is noiseless. Controls are located above ground in accessible arrangement.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13369

Kloppenborg (one piece) Cast Aluminum
EXHAUST and CIRCULATING FAN BLADES



INDUSTRIAL USE

Where air is to be moved — Kloppenborg one-piece high grade cast aluminum alloy fan blades are proving exceptionally efficient. Kloppenborg Fan Blades are purchased by many of America's leading industrial plants.

EIGHT SIZES

Kloppenborg Fan Blades are made in 8 sizes—from 12" to 36"—and are rated at 1750 RPM to deliver approximately from 1255 to 14,900 CFM. They are bored to most shaft specifications and are carefully balanced. YOUR maintenance men can install them easily.

Send today for a catalog on blades and all other parts needed for fans.

KLOPPENBORG ALUMINUM FOUNDRY
Established 1938
DAVENPORT 5, IOWA

If you write maker identify as IEN - 13370

Nutting
FLOOR TRUCKS
WHEELS-CASTERS

Here are two veterans of the Nutting line—proven resourceful and tough for faster material handling. These easy rolling, well balanced trucks get the job done right — on time! Your men will like to work them — and their cost per year is hardly visible.

Fig. 16—No. 24
Steel-bound hardwood frame, extra heavy axle.

Fig. 1136
Non-Tilting Bar Handle Truck
Capacity 2500-3000 lbs. A proven veteran for all-round service. Pressure-lubricated roller bearing wheels. Range of sizes.

Write for Junior Catalog 52-G

Nutting makes everything in floor trucks, wheels, casters. Representatives in principal cities.

See your classified telephone directory or write direct to

SINCE 1891 **Nutting** TRUCK AND CASTER CO.
2013 DIVISION ST. • FARIBAULT, MINN.

If you write maker identify as IEN - 13371

AVAILABLE

PLEXIGLAS
LUCITE
ACETATE

SHEETS • RODS • TUBES

Cut to Size. Large or Small Quantities Shipped from stock

Our prompt service has made us a leader in this field

FREE CATALOGUE ON REQUEST

PLASTIC SUPPLY CO.
2901 N. GRAND BOULEVARD
ST. LOUIS 7, MO.

If you write maker identify as IEN - 13372

EASY WAY TO LIFT HEAVY LOADS

Use economical Oildraulic power to lift loads directly from plant floor to trucks, freight cars, machines or different building levels. Rotary Levelators speed plant traffic, conserve manpower, cut costs. Save Plant space, too . . . no need for loading dock and ramps. Plant floor can be poured at grade. Safe, dependable, economical operation by compressed air or small electric power unit. Capacities up to 80,000 lbs. Installation simple and inexpensive. For complete data, write for Catalog RE-201. ROTARY LIFT CO., 1175 Kentucky, Memphis 2, Tenn.

Rotary LEVELATOR LIFT

If you write maker identify as IEN - 13373

FOR PUMPING MODERATE CAPACITIES AGAINST MEDIUM AND HIGH HEADS USE THESE TURBINE VANE TYPE PUMPS

ILLUSTRATED—Flexible-coupled standard pump

PEERLESS TYPES TVE & TVB

PEERLESS PUMPS

For pumping hot or cold clear or vaporous liquids

Write today for Peerless Pump Bulletin No. B-2205. Profusely illustrated with pictures of both standard and self-priming pump types. Also contains sectional pump drawings, elevations and dimensional data, head-capacity characteristics.

Capacity: to 58 gpm
Heads: to 800 ft.
H.P. Range: to 20 h.p.
ILLUSTRATED—Close-coupled self-priming pump

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION

Los Angeles 31, California and Indianapolis 8, Indiana
Offices: New York, Chicago, St. Louis, Atlanta, Dallas, Plainview and Lubbock, Texas, Fresno, Los Angeles, Phoenix, Albuquerque, N. M., Tulsa

If you write maker identify as IEN - 13374

ANOTHER PROBLEM SOLVED WITH *Pliobond*

Plywood hulls of ocean-going boats made by Jeffries Boat Works, Venice, California, are coated with PLIOBOND to protect and seal the wood.

PROTECTION-PLUS for this OCEAN-GOING BOAT HULL

Undercoated with PLIOBOND before antifouling paint is applied, the hull of this ocean-going boat is protected against deterioration. The PLIOBOND coat seals the plywood hull, protects the plywood, holds the bottom paint with a strong, lasting bond. And as the paint wears away, the PLIOBOND provides lasting protection to the hull—preventing rapid deterioration.

This application of PLIOBOND is an example of the great endurance you get when all your bonding is done with PLIOBOND—Goodyear's use-proved thermoplastic adhesive. It gives effective resistance to salt water, weathering, chemicals, stress, strain and shear—can literally be used to "bond anything to anything."

Write for full details today to:

Goodyear, Chemical Division
Akron 16, Ohio

CHEMICAL GOODYEAR DIVISION

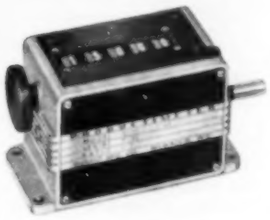
Use Proved Products
CHEMIGUM • PLIOBOND • PLIOLITE • PLIOVIC • WING-CHEMICALS
The Finest Chemicals for Industry

Chemigum, Pliobond, Pliolite, Pliovic—T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

If you write maker identify as IEN - 13376

COUNTING . . Five wheel unit actuates circuit on pre-set total

Source: DURANT MFG. CO.
1930 N. Buffum St., Milwaukee 1, Wis.



Counts to 99,999

Each digit wheel in this new Model-SP Productimeter counter is made up of two wheels, one of which is set manually to a predetermined number after hinging up the housing cover for access to the interior. When the count on the mating wheels reaches this total, the circuit contacts are closed or opened depending upon the contact set-up. The control circuit rates 15 amp. on 110-volt ac. Figures on the wheels are ¼ in. in height by ⅛ in. in width.

Two designs include the rotary unit shown in the illustration and one that is operated through an arc from a reciprocating number on a machine. The former can be operated at speeds to 3,000 counts per min. and can be specified for forward rotating in either direction. When operated in the opposite direction the unit will subtract. The reciprocating design is intended for speeds to 600 counts per min. and operates in one direction only. A reset knob on the side of the housing permits return to zero position. Overall dimensions of the rotary unit are about 4⅜ by 2⅛ by 2⅝ inches.

If you write maker identify as IEN - 13377

VALVE . . Pressure regulator combined with filter for an air line

Source: MINNEAPOLIS-HONEYWELL REGULATOR CO.
4456 Wayne Ave., Philadelphia 44, Pa.

Cleans and controls

Compressed air, at nominal pressure to 100 lb., connects to the ¼-in. inlet in this new combination of filter and pressure regulator. Clean air, free from oil, water and dirt, is delivered at the ¼-in. outlet connection at any desired pressure to 35 pounds. With inlet at 100 lb. and outlet at 20 lb., maximum air capacity is about 12 cfm. for the new unit.

The three part assembly includes a top bonnet that houses the adjusting stem and loading spring and mounts the adjusting knob, a center ring containing the pilot stem and the port seats, and a bottom cap that encloses the filtering element and forms a removable sediment chamber. The element is a cylinder made of a helically wound ribbon of phenolic resin impregnated cellulose. Filtration is accomplished by passing the air between the layers of ribbon to leave the solids and other impurities on the outer surface of the element from where they drip to the sediment chamber at the bottom. Effective filtering area is about 6 square inches. Overall dimensions are about 3 by 9 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 13378

the helmet that's
Danger Proofed 4 Ways

. . . the protection that leaves nothing to chance!

IMPROVED *McDonald* SAND BLAST HELMET

FATIGUE-PROOF COMFORT! Made of extra tough duralumin to defy shock and abrasion—yet so light it insures wearing comfort hour after hour!
DUST-PROOF SEAL! New inner collar! New style cape! Harmful abrasives can't seep in! Special flexible wire ring clamps cape and inner collar snugly to helmet to seal dust out.
SHATTER-PROOF WINDOW! Larger full vision window is made of dual shatter-proof abrasive resistant plastic—doubly protected by fine mesh guard! Controlled air distribution prevents fogging.
NEW BUMP-PROOF FLOW CONTROL VALVE! Can be set to any pressure—can't be jarred out of position. Assures positive pressure regulation, mounts conveniently to side of belt.

U. S. BUREAU OF MINES APPROVAL - 1927

Write for Full Information and Price

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
5721 WEST 96TH ST., LOS ANGELES 45, CALIF.
Other Offices in San Francisco & Houston

If you write maker identify as IEN - 13379

INDUSTRIAL INKS To Mark Anything!

Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one. Marking experts insist on "Clear Print" Wood Block Stamp Pads and Opaque Inks. They get clear, sharp, fast-drying impressions. Also inks for brush, pen, stencil or machine application available in a variety of colors and quantity containers.

★ Quick Laboratory Service On Your Problem Markings
★ To Permanently Mark . . . Metals, Plastics, Glass, Wood, Paper, Leather, Ceramics—glazed, varnished or lacquered surfaces and virtually every other known material.

J. D. PHILLIPS, President
PHILLIPS PROCESS CO. INC.
192 MILL STREET
ROCHESTER 14, N. Y.

CARBON PAPER · PROTYPE TYPEWRITER RIBBON · CLEAR-PRINT WOOD STAMP PADS

If you write maker identify as IEN - 13380

"We Tested Them and Found That Fusetron Fuses *actually* Do Prevent Needless Shutdowns"

"We have a 3 phase, 3 circuit switch panel controlling a resistance type heat treating furnace. In this switch we formerly installed nine 600 amp. 250 volt renewable fuses.

"These fuses, however, heated excessively and were blowing as often as once a day. To stop these blows we even tried out using 800 ampere links but it didn't do any good. We still had fuses blowing.

"As a test we installed three 600 amp. Fusetron fuses in one circuit. That was in May, 1947.

"The first and only blow we had on these Fusetron fuses was in April 1948 — one year later. This blow was apparently caused by the heating of the ordinary fuses in the other two circuits.

"The shutdown caused by this blown Fusetron fuse woke us up to the fact that the test we had made proved that Fusetron dual-element fuses actually do prevent needless shutdowns.

"Since then we have used only Fusetron fuses in this switch and our needless shutdown troubles have disappeared."

H. T. Walker, Chief Electrician
Crescent Insulated Wire and Cable Company
Trenton, New Jersey

Why Risk Losses In Your Plant

You too, can profit from Mr. Walker's experience by replacing every ordinary fuse with a FUSETRON dual-element fuse. And by passing the word along that all stock and purchase records should call for FUSETRON dual-element fuses you have action that begets money saving.

FUSETRON
TRUSTWORTHY NAMES IN ELECTRICAL PROTECTION
BUSS

BUSSMANN Mfg. Co.
(Div. McGraw Electric Co.)
University at Jefferson
St. Louis 7, Mo.

If you write maker identify as IEN - 13382

"HOOD ON WHEELS"! LATEST DICO'S Free CATALOG EDITION

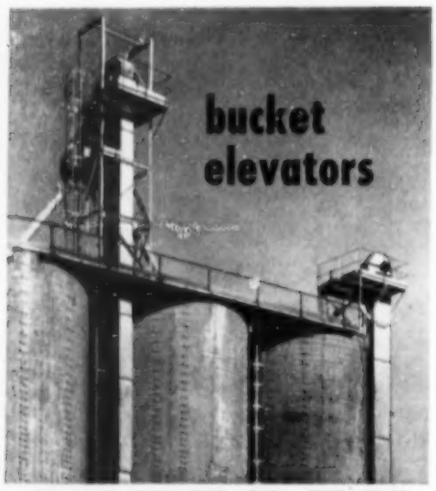
. . . Sure Speedy HELP On Your WHEEL PROBLEMS

The latest edition of the DICO Company's WHEEL CATALOG HELPS you by answering your high speed and low speed wheel engineering problems . . . with simplified information and specifications on your needs of dependable, highest quality DICO Wheels. Be sure YOU get this "HELP ON WHEELS"!

DICO COMPANY Write TODAY! 202 S.W. 16th ST., DES MOINES, IOWA

A modern line of industrial wheels 6"-22" rubber diameter.

If you write maker identify as IEN - 13383

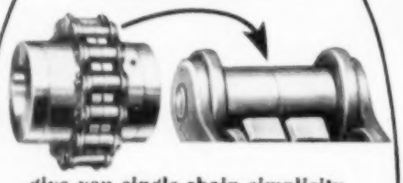


JEFFREY

ESTABLISHED 1877
THE JEFFREY MANUFACTURING CO.
914 Fourth Street, Columbus 16, Ohio

If you write maker identify as IEN - 13384

Only LINK-BELT "RC" FLEXIBLE COUPLINGS . . .



give you single-chain simplicity, plus divided rollers

It's Link-Belt's exclusive design that makes the difference! No other Roller Chain Coupling offers the simplicity of single-width chain combined with these operating advantages: Equalize load, maintain proper balance at high speeds, adjust to reasonable misalignment and end float. Link-Belt's complete line of "RC" Roller Chain Couplings covers all sizes from fractional to 1000 hp. You can get all the facts from Folder 2363.

"RC" Couplings available in 30 sizes, ⅜ to 12 in. bore.

LINK-BELT COMPANY
Dept. 21
307 N. Michigan Ave.
Chicago 1, Ill.

LINK-BELT "RC" FLEXIBLE COUPLINGS

USEFUL NEWS NOTES INFORMATION

If you write maker identify as IEN - 13385

BRAZING . . Furnace method is described with application suggestions in technical article reprint

Electric Furnace Co.
151 Wilson St., Salem, Ohio

L. C. West, company's Vice President, wrote a series of three articles in the technical literature now available in 16-page reprint form. Title is "Practical and Economical Aspects of Furnace Brazing Processes". It covers design factors and methods of handling assemblies to be furnace brazed, how to apply brazing materials, selection and fluxes, tolerances of parts, furnace information.

If you write maker identify as IEN - 13386

CALENDAR . . For 1952-1953 with summaries on instruments for research and control

Baird Associates Inc.
31-35 University Road, Cambridge 38, Mass.

While the supply lasts, the company still has available some copies of its 1952-1953 Calendar-Compendium and will send you one upon request. The calendar runs through June 1953, measures 8 by 12 inches. Pictures show instruments made by the company from spectrographs to a plant stream analyzer.

If you write maker identify as IEN - 13387

CLEANING . . How a carburetor works, how to clean and adjust it are described in booklet

Pennsylvania Refining Co.
2684-88 Lisbon Road, Cleveland 4, Ohio

"Know Your Carburetor" titles new pocket-size 48-page booklet which the company will send you on request. It tells how a carburetor works, other parts that affect engine performance, how to adjust a carburetor, how to clean it in place using the company's Gumout material or how to clean it after removal from the engine.

If you write maker identify as IEN - 13388

CONNECTORS . . Two new booklets review instructions on applying solderless terminals

Aircraft-Marine Products Inc.
2102 Paxton St., Harrisburg, Pa.

Companion booklets are announced to go along with the company's instruction films, "All's Well that Ends Well" and "By the Millions", previously described IEN-6149-52. They give a summary of the information in each movie, on use and application of solderless connectors by hand tools in the first, by automatic machines in the second. The company will send you a copy of each booklet information on the films.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13389

APCO Packaged CONDENSATION RETURN UNITS

for the SMALL LOW PRESSURE JOBS

10 to 40 lbs. with 8, 15, 30 Gallon Receivers

Packaged Duplex Condensation Return Unit with No. 4 Series Apco Pumps.

Start saving valuable heat units with APCO Square Tank Units. Built to meet demand for a smaller unit with the superb performance of our larger units. Remember, the Pumps are Apcos. No Vapor Binding — Special Provision for Expansion and Contraction — No Frictional Wear within pump. Thus, ECONOMY.

Write for Bulletin 112-ST

DISTRIBUTORS IN PRINCIPAL CITIES

AURORA Always PUMPS AURORA PUMP COMPANY
52 LOUCKS STREET • AURORA, ILLINOIS

If you write maker identify as IEN - 13390

Check the Features that make FRONTIER 40-E

ALUMINUM ALLOY PIPE WRENCHES . . .

Perfect for PIPE FITTING

Feather Weight

Rugged Strength

- HALF THE WEIGHT of ordinary wrenches for easier handling and effortless work.
- EXTRA STRENGTH to meet rough usage through use of rugged Frontier 40-E Aluminum Alloy.
- JAWS THAT WON'T LET GO because of sturdy steel teeth. Replaceable steel inserts for jaws simplify wrench maintenance.
- GUARANTEED AGAINST BREAKAGE in normal use. Sizes range from 14" to 48" to fit specific jobs.
- TAKES HEAVY PRESSURE. Man in lower illustration weighs 215 pounds, is exerting full pressure 40" from wrench jaw! Sizes 14", 18", 24" and 36".

Use the wrench that's expressly designed for pipefitting problems. Insist on FRONTIER Aluminum Pipe Wrenches.

Ask your jobber, or write today to:

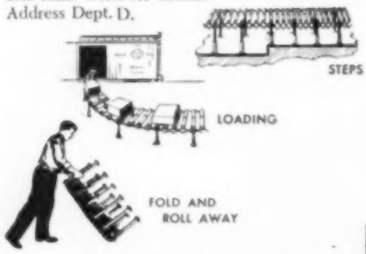
FRONTIER BRONZE CORPORATION
4887 Packard Road, Niagara Falls, N. Y.

If you write maker identify as IEN - 13391

fmc GRAVITY ACCORDION CONVEYORS . . are tops in flexibility!

Portable! Extensible! Collapsible! Available in easy-to-handle sections. Extends to 10 feet; contracts to 3 feet. Ideal for temporary, permanent or semi-permanent set-up. Adjustable legs compensate for uneven floors and steps. Split rollers keep materials on without side rails. Write for details. Address Dept. D.

TURNS



STEPS

LOADING

FOLD AND ROLL AWAY

FOOD MACHINERY AND CHEMICAL CORPORATION
PACKING EQUIPMENT DIVISION
NM-5 Riverside, California • McAllen, Texas

fmc

If you write maker identify as IEN - 13392

For SALES and SERVICE on VIKING ROTARY PUMPS
Call Your Nearest VIKING REPRESENTATIVE

The Viking Pump Company is represented by a special sales staff and service organization in every major industrial area of the United States and Canada. Our representatives are trained to give efficient, dependable service on Viking equipment. We have a full stocking organization. Write or call the Viking Pump Company for the name of the Viking representative in your area.

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VIKING
THE FAMOUS NAME IN PUMPING

See Our Catalog in SWEET'S

VIKING PUMP CO. Cedar Falls, Iowa

If you write maker identify as IEN - 13393

NICHOLSON MAKES

FREEZE-PROOF

Steam Traps

for Every Plant Use

Because they drain completely when cold, these four types of Nicholson steam traps are positively freeze-proof. Can be freely installed outdoors. Universally recommended for use in lines which need not be in continuous use during cold weather, because they are freeze-proof and because their 2 to 6 times average drainage capacity results in minimum heat-up time. The non-air binding feature of Nicholson traps also notably facilitates heat transfer in severe weather. Size ¼" to 2"; pressure to 225 lbs.

BULLETIN 450

159 Oregon St., Wilkes-Barre, Pa.

W. H. NICHOLSON & CO.

TRAPS · VALVES · FLOATS

If you write maker identify as IEN - 13394

Stop annoying Blink...Blink...Blink

WITH WATCH DOG NO-BLINK FLUORESCENT STARTERS

Annoying fluorescent blink and excessive maintenance go hand in hand. Here's what Watch Dog* starters do about it.

- Watch Dog starters *stop blinking* by automatically turning off failing fluorescent lamps.
- A Watch Dog starter *keeps the lamp off* until the red reset button is pushed when new lamp is installed. No recurrent blinking every time lights are turned on.
- Watch Dogs *outlast* ordinary starters—by as much as 10 to 1. Ballasts last longer, too.

You can stop blinking—cut starter replacement costs—cut ballast replacement costs—by changing to General Electric Watch Dog no-blink starters now—and by specifying them when you next buy new fixtures. For a copy of folder Q38-1242, write Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

*Registered Trade-mark General Electric Company

LOOK FOR THIS TAG when you buy fluorescent fixtures. It's your guarantee that the fixture is equipped with G-E Watch Dog starters.

For all replacement needs—use the famous Watch Dog no-blink starter with the red reset button.

You can put your confidence in—

GENERAL ELECTRIC

USEFUL INFORMATION

(Continued)

If you write maker identify as IEN - 13396

CASTINGS . . In ductile iron are described in technical reprint as to their design

American Brake Shoe Co.
230 Park Ave., 18th Floor, New York 17, N. Y.

Technical article written by John L. Gohsen, Development Metallurgist with the company, is offered in 8-page reprint form with the title, "Designing with Ductile Iron". The bulletin presents graphs and photomicrographs to support its description of properties, lists design advantages and considerations.

If you write maker identify as IEN - 13397

CONTROLS . . Use of magnetic amplifiers to control steel-mill drives is described in booklet

Westinghouse Electric Corp.
511 Wood St., Dept. IEN, Room 1110, Pittsburgh 30, Pa.

Nine applications are described for the company's Magamp regulator in steel mill drives, ranging from tension control and speed control to quick acceleration in new 20-page Booklet B-5468. A flow chart and schematic wiring diagram are given for each. A section tells how the magnetic amplifier works.

If you write maker identify as IEN - 13398

COUNTING . . Simplified schematic diagrams show how to use electronic counter for many purposes

Berkeley Scientific Division
2202 Wright Ave., Richmond, Calif.

"Electronic Instrumentation" is new 32-page pocket bulletin presentation of information on the company's electronic decimal counting unit that operates at speeds to 1,000,000 per second. Little schematic diagrams of the counter face show how it can be used as a straight counter, nuclear scaler, preset counter, events-per-unit-time meter, time interval meter, parts number control, and to measure frequency, speed, flow.

If you write maker identify as IEN - 13399

CUTTING . . Color sound movie shows how to apply machine gas cutting equipment

Air Reduction Sales Co.
1656 Lincoln Bldg., New York 17, N. Y.

"Burning Blades" titles new Kodachrome sound film on the use of oxyacetylene cutting equipment over a range of applications from outlines in steel plate to slicing steel scrap for melting. Locations include shipyards, manufacturing plants and steel mills. Running time is 29 minutes.

If you write maker identify as IEN - 13400

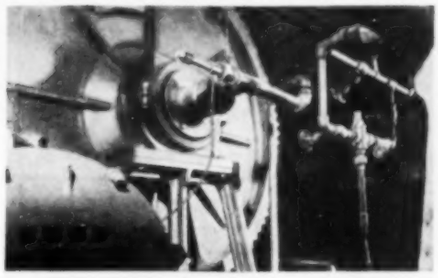
DRIVES . . Maintenance manual on company's fluid drive with disconnect feature

Twin Disc Clutch Co.
1401 Racine St., Racine, Wis.

Bulletin 500 designates new 12-page maintenance manual on the company's Model-HUD hydraulic coupling, available on letterhead request by authorized personnel. It describes fluid-dumping feature of the coupling, previously described IEN 10735-50, by which the unit can be made to serve as a cut-off clutch. Assembly and disassembly procedures are detailed.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13401



Paint Grinding Controlled

Picture shows one of a battery of pigment grinding mills at the plant of Grand Rapids Varnish Corporation, Grand Rapids, Mich.

The rotating drum (or pebble mill) is equipped with a jacket through which cooling water is circulated.

This water is held at the desired temperature by a Sarco self-operated cooling control, Type TR-21R.

These simple, inexpensive regulators are available in sizes ½" to 8", and are widely used to control the temperature of cooling water or brine in air conditioning, cold storage, still condensers, internal combustion engines, compressors, etc.

Write for Catalog 700-12 to *Sarco Company, Inc., Empire State Bldg., New York 1, N. Y.* *Advt. 606*

If you write maker identify as IEN - 13402

STACKBIN sections will give you a stockroom wherever you want it—quickly and easily as building a sectional book case. These patented sectional storage bins nest together without the use of tools—cost you nothing to build, nothing to move. Find out today how STACKBINS can lower YOUR handling costs.

IMMEDIATE SHIPMENT

Manufactured and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa

Write Stackbin Corp., 1077 Main St., Pawtucket, R. I.

STACKBIN SYSTEM

"Stacked and Still Accessible"

If you write maker identify as IEN - 13403

SAVE Chrome Plate Your Cutting Tools in Your Own Shop . . . **FAST**

Chromaster—revolutionary new industrial chrome plating method—already adopted by many leading firms to lengthen tool life, reduce downtime

With the demands on your own machinery more pressing, Chromaster means dollar savings to you. It enables you to increase tool life, salvage worn cutting tools and parts, reduce tool inventories, and lessen machine downtime.

Chromaster is the new industrial chrome plating machine which permits you to conduct your own plating operations in small space, anywhere in your plant.

Compact, self-contained units can be operated at amazing speed—3½ minutes for the average job. There's a size Chromaster for every need.

Send today for complete facts on Chromaster.

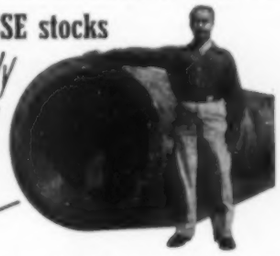
INDUSTRIAL CHROME DIVISION
WARD LEONARD ELECTRIC CO. *Chromaster*

33 South Street, Mount Vernon, N. Y.

If you write maker identify as IEN - 13404

Now! FRASSE stocks

Centrifugally Cast Steel Tubing



ACIPCO steel tubing, centrifugally cast, is now distributed by Frasse in sizes ranging from 2" to 50" O.D., wall thicknesses of ¼" to 4", in lengths up to 16 feet. The more popular sizes—in AISI 1025—are speedily available from Frasse warehouse stocks. Other sizes and analyses (as little as 16 feet) can be made to order promptly.

Government and ASTM, AMS, ABS, ACI, AISI Specifications can be readily met. ACIPCO tubing is made in any standard or non-standard analysis. All steel used in its manufacture is produced in electric furnaces.

Why not check the advantages offered by this product? Complete facts are contained in our Engineering Memo #11. Send for your free copy today.

Call FRASSE 1st for Seamless, Welded and *Centrifugally Cast Steel Tubing 2" to 50" O.D.*

Peter A. FRASSE and Co., Inc.

17 Grand Street, New York 13, N. Y.

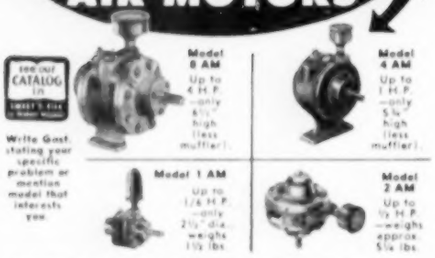
Lyndhurst · Philadelphia · Buffalo · Syracuse

If you write maker identify as IEN - 13405

JOHNSON JB BEARINGS
Sleeve-Type

If you write maker identify as IEN - 13406

Get astonishing POWER and other unique advantages with GAST rotary AIR MOTORS



FOR YOUR ORIGINAL EQUIPMENT APPLICATIONS . . .

Gast rotary-vane Air Motors may solve tough problems on your product! They're lower in first cost, variable in speed, explosion-proof, quick starting, amazingly compact and light compared to electric motors.

Four sizes available, reversible and non-reversible ball bearing types, several mounting styles, speeds to 12,000 RPM. Numerous accessories. "Air may be your Answer!"

Original Equipment Manufacturers for over 25 years

GAST ROTARY AIR MOTORS · COMPRESSORS · VACUUM PUMPS
GAST MANUFACTURING CORP., 11th Hinkley St., Benton Harbor, Mich.

If you write maker identify as IEN - 13407

USEFUL INFORMATION

(Continued)

If you write maker identify as IEN - 13408

FOUNDRIES . . How to select molding sand and how to test it are described in new booklet

Claud S. Gordon Co.
3002 S. Wallace St., Chicago 16, Ill.

H. L. Campbell, Metallurgical Engineer and foundry practice consultant for the company, is author of new 32-page booklet on foundry sand. Title is "Taking the Mystery out of Sand Control". Subjects include selection of molding and core sands, control of moisture and other properties, core binders, correction of defects due to unfavorable sand conditions, company's test equipment.

If you write maker identify as IEN - 13409

HANDLING . . How to select and use wheels, casters, hand trucks, platform trucks, skids

Caster and Floor Truck Mfrs. Association
27-A E. Monroe St., Chicago 3, Ill.

Basic information is given in new 48-page "Handbook of Materials Handling Equipment", compiled and written by the Association's Market and Product Research Committee with Edw. L. Lee of Saginaw Products Corp. as chairman. The book, list price $1, describes wheels, casters, hand trucks, platform trucks, skids, pallets as to why made, how made, how to use, how to select, how to use manufacturers' catalogs.

If you write maker identify as IEN - 13410

MALLEABLE IRON . . Eight properties described in reprint of a paper by Society's Research Director

Malleable Founders' Society
1802 Union Commerce Bldg., Cleveland 14, Ohio

James H. Lansing, Technical and Research Director for the Society, presented a paper at last year's International Foundry Congress. This paper now is offered on request under the title, "Important Attributes of Malleable Iron". It starts with malleability and concludes with corrosion resistance of the metal.

If you write maker identify as IEN - 13411

METAL SPRAYING . . Color sound movie shows how metallizing is being applied in many fields

Metallizing Engineering Co.
38-16 30th St., Long Island City 1, N. Y.

Actual metallizing work done on worn and damaged shafts, inside diameters of metal parts, corrosion proofing, is demonstrated by new 16-mm. color sound film, "Metallizing". Running time is 28 minutes. One application shows the use of sprayed aluminum to protect 85,000 sq. ft of underframe on a passenger train from corrosion. Ask for 8-page bulletin.

If you write maker identify as IEN - 13412

MOTORS . . Cardboard slide selector presents characteristics on 35 fractional-hp. motors

Howard Industries
1758-62 State St., Racine, Wis.

Moving the slide of new "Motor Selector" brings numerical data on any one of 35 electric motors into view at a window. You can read type, rating, speed, and other information on EMC and Cyclohm motors from 1/2000 to ½ hp. The company will be glad to send you the selector upon written request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13413

GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—by air pressure! Foot control valve opens and shuts vise instantly, leaving both hands free to produce more! Jaw opens up to 5 inches, holds castings, parts, jigs, etc. Compact and trouble-free.

Complete with Foot Control, Air Hose and Fittings . . . . . only $29.90

Prompt Delivery from Your Supplier or Write Direct

W. R. BROWN CORPORATION • 2645 N. Normandy Ave., Chicago 35, Ill.

AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

If you write maker identify as IEN - 13414

Better cleaning cuts costs in aircraft production. This 48-page illustrated booklet outlines all the big cleaning jobs. Have you seen the latest Oakite recommendations on:

- How to clean aluminum before anodizing? *See page 4.*
- How to prepare aluminum for spot welding? *See page 10.*
- How to prepare aluminum for painting? *See page 15.*
- How to clean aluminum before and after heat treating? *See page 20.*
- How to strip paint from aluminum? *See page 22.*
- How to select and install cleaning tanks, rinse tanks, and spray-washing machines? *See pages 31 to 35.*

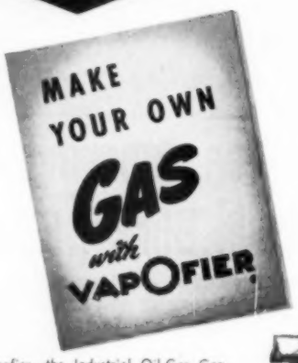
FREE For a copy of *"How to clean metals in aircraft production"* write Oakite Products, Inc., 16A Rector St., New York 6, N. Y.

Technical Service Representatives in Principal Cities of U. S. & Canada

OAKITE SPECIALIZED INDUSTRIAL CLEANING MATERIALS · METHODS · SERVICE

If you write maker identify as IEN - 13415

WRITE FOR THIS FREE BULLETIN



Vapofier—the Industrial Oil-Gas Generating Unit used for primary fuel source or as standby for natural gas.

VAPOFIER CORPORATION
10326 South Throop St., Chicago 43, Illinois

If you write maker identify as IEN - 13416

Clean And Rustproof In One Operation With IMMUNOL And Your Tap Water

It is an amazing fact that a small quantity of liquid IMMUNOL added to any water makes that water rustproof, a powerful wetting agent and a potent cleaning solution—all if need be, in one operation. No special preparations or equipment are necessary, and being neutral, odorless, non-toxic and non-inflammable there is no handling problem either before, after or during use. Parts may be dipped, sprayed or wiped whichever is most convenient, and after treatment will retain a non-oily, non-tacky, invisible film of rust protection designed for indoor uses. This film may be removed at any time with plain water or may be painted or lacquered over without removal.

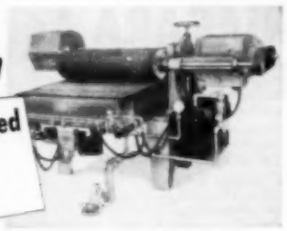
There are countless varied uses for IMMUNOL:

- Removal of dirt, light oils, lint, etc. from metals, glass, plastics, ceramics, woodwork, walls, painted surfaces, etc.
- Rust protection of ferrous metals (For cast iron use IMMUNOL #1515)
- Prevention of water stains after rinsing in plating.
- For rust protection and preserving bright finishes after tumbling.
- Additional rust protection for soluble oil emulsions.

Send for descriptive booklet.

Haas MILLER Corp.
4th & BRISTOL STS. • PHILA. 40, PA.

If you write maker identify as IEN - 13417



Precision

for improved surface finishing

CLAIR

SURFACE FINISHING MACHINES

With adjustable, abrasion-proof hydraulic controls permitting rapid change of variables, these machines assure quality surface finishing on a production basis. With magnetic or vacuum chuck, Clair Machines are custom-built to solve your surface finishing problem.

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Name and Kick Plates
Industrial Jewelry
Decorative Hardware
Blanking Stock
Manicure Instruments
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CLAIR MANUFACTURING CO., INC.

Specialized Machine Equipment For Glazing and Polishing Operations

OLEAN, N. Y.

If you write maker identify as IEN - 13418

It "Takes the Pick" of Your Clothes

Everyone Can Count on

VEEDER-ROOT

Weavers know this as a Pick Counter, because it counts the picks, or trips of the shuttle across the loom as cloth is woven. And this is the newly modernized model of the original V-R 2-3 Convertible Counter. 4th counting unit is also available.

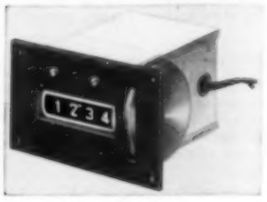
This is another V-R "first" in advancement of counter design for every field of industry. And it's more than likely that V-R can supply or design a counter that will count to *your* advantage. Find out. Write:

VEEDER-ROOT INCORPORATED
"The Name That Counts"
HARTFORD 2, CONNECTICUT
Chicago 6, Ill. • New York 19, N. Y. • Greenville, S. C.
Montreal 2, Canada • Dundee, Scotland
Offices and Agents in Principal Cities

If you write maker identify as IEN - 13420

COUNTING . . Four wheel unit for dc. electronic circuit actuation

Source: PRODUCTION INSTRUMENT CO.
700-10 W. Jackson Blvd., Chicago 6, Ill.



$13.50

New counter is characterized by its ability to operate on dc. in direct application in an electronic tube plate circuit for speeds to 1,800 counts per minute. It also is available for actuation by any suitable switch, relay or photoelectric device. Operation is on 6 to 110-volt dc. or ac. Mounting is in a panel opening to clear 2¾ by 1⅝ inches.

Assembly is in a metal housing with a plastic window. White figures appear on a black background on the wheels. One turn of the reset knob returns all of the wheels to zero.

If you write maker identify as IEN - 13421

MACHINING . . Standardized tools include cutters, mills, hobs, saws

Source: ILLINOIS TOOL WORKS
2503 N. Keeler Ave., Chicago 39, Ill.

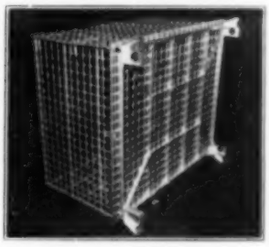
Illinite Catalog upon request

The company announces a new line of standardized cutting tools to supplement its previously developed tools. The new line includes standard end mills, saws, milling cutters, keyslot cutters, hobs and shaper cutters. It also includes gear measuring blocks, tool bits, die filing machines and die files. Trade name of the new line is Illinite.

If you write maker identify as IEN - 13422

HANDLING . . Collapsible wire box is assembled on steel pallet type base

Source: PITTSBURGH STEEL PRODUCTS CO.
1402 Grant Bldg., Dept. EN, Pittsburgh 19, Pa.



Shown on one side

New leg design for secure stacking, corner plates to resist shock handling and elimination of the center leg to permit stacking when the load is above the top wire characterize this new Cargotainer, previously described IEN-4379-47. Five folded units occupy the same space as one opened up for operation. Nominal load rating is 5,280 pounds. Base dimensions are 36 by 45 in. and 48 by 48 in. for two available designs.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13423

Drill Hardened Steels without Annealing—

USE The New IMPROVED "HARDSTEEL" DRILL

With the new, improved "HARDSTEEL" Drill, you can do accurate, smooth drilling, countersinking, counterboring and reaming in steels hardened by any process without first annealing the work. And they work with equal ease on work-hardening steels and high carbon—high chrome steels of any degree of hardness.

"HARDSTEEL" Drills fit standard drill presses. They save time and reduce rejects. They permit engineering changes requiring additional drilling after hardening. And parts drilled after hardening always match at assembly.

Write for a copy of the "HARDSTEEL" Operators Manual showing how "HARDSTEEL" drills are cutting costs in thousands of plants.

You Harden It—We'll Drill It—With "HARDSTEEL"

BLACK DRILL COMPANY, INC.
1378 East 222nd St. • Cleveland 17, Ohio

Also makers of— BLACK DRILLING UNITS—AUTOMATIC, SELF-CONTAINED—FOR COST-CUTTING PRODUCTION ON ALL MATERIALS
Write for information

If you write maker identify as IEN - 13424

MACHINE DESIGNERS!

GET THE FULL STORY ON HANNIFIN'S

NEW *Pilot-Master* Air Control Valves!

HERE'S WHY MAINTENANCE MEN PREFER THEM . . .

FEWER VALVES TO STOCK
Use same valve 2-way or 3-way, normally open or normally closed.

FEWER PARTS TO STOCK
Unique cartridge construction makes "insides" easily replaceable.

INDUSTRIAL SOLENOIDS
Long-lasting, easy to change coils to any standard voltage.

All Sizes From ¼" to 1¼" I.P.S.
Pressures From 15 to 150 P.S.I.
Write for Bulletin 231 and get the complete story!

HANNIFIN

Hannifin Corporation • 1107 S. Kilbourn Ave. • Chicago 24, Ill.

If you write maker identify as IEN - 13425

Whatever your sanding problem . . . on wood, metal, plastic

. . . there's a SUNDSTRAND Straight-Line Action Air Sander to solve it!

No swirls, no pressure marks, no fatiguing vibration! Used throughout the world for: Wood finishing . . . building materials, furniture, cabinets, wood parts, etc. • Plant production and maintenance work • Finishing metal and plastic parts • Truck, car and machinery refinishing • Both single and double pad models are available. Ask for bulletin HE-12.

SUNDSTRAND

SUNDSTRAND AIR SANDERS

SUNDSTRAND MACHINE TOOL CO.
PNEUMATIC DIVISION, ROCKFORD, ILLINOIS

If you write maker identify as IEN - 13426

How to make BIGGER MOTORS

. . . out of SMALLER MOTORS . . .

Motors or engines do bigger jobs with Twin Disc's HYDRO-SHEAVE® Drive. Slipped on the end of the motor or engine shaft, they enable easy pickup of heavy loads, absorb shock loads, reduce belt wear, save motor burnouts, stalls. By use of HYDRO-SHEAVES, motors can often be selected for running load rather than starting load requirements. Let your Twin Disc Hydraulic Dealer show you, or write for Bulletin 145-B or a file of Installation Reports.

HYDRO-SHEAVE for motors and engines ¾ to 50 hp.

TWIN DISC

TWIN DISC CLUTCH COMPANY: Racine, Wisconsin • Kenosha Division, Kenosha, Wisc.
BRANCHES: CLEVELAND • DALLAS • DETROIT • LOS ANGELES • NEWARK • NEW ORLEANS • SEATTLE • TULSA

If you write maker identify as IEN - 13427

Assure Free-Flowing Bins, Hoppers and Chutes with

SYNTRON

"Semi-Noiseless"

ELECTRIC VIBRATORS

with variable control of power

Now, Syntron presents a complete line of Semi-Noiseless Electric Vibrators for use in installations located close to workers where noise is a major factor.

They operate the same as standard Syntron Vibrators — assure a smooth, controlled flow of material — prevent loss of costly time due to material coming 'short' on dependent operations — provide a safety factor by eliminating the necessity for your men to climb ladders or framework and balance in precarious positions while spading, rodding or sledging clogged materials.

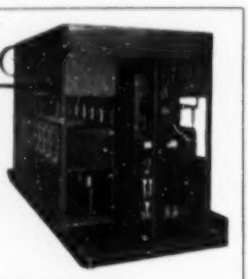
They can be applied to any size and shape of bin, hopper and chute — whether made of steel, wood, or concrete. New 'cushion' action provides a sharp reduction in the operating noise.

Write Today for Free Catalog Folder

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

If you write maker identify as IEN - 13428

SYNTRO



One of two 300 KW, 285 volt d-c Selenium Rectifier Units providing the d-c power requirements of a large coal mine.

SELENIUM RECTIFIER

POWER CONVERSION UNITS

Heavy Capacity Equipment

For Changing High Voltage a-c to d-c

They are designed for industrial applications such as supplying constant voltage power for d-c mining, elevator, machine tool and crane motors. An economical means of obtaining d-c power for the excitation of synchronous motors, magnets, magnetic chucks, arc lights, etc. They provide 125 volt to 550 volt direct current. Selenium Rectifiers provide—low installation, maintenance and operating costs, high efficiency and good regulation.

The basic unit consists of three phase, insulated transformer and selenium rectifier stacks enclosed in properly ventilated metal casing. Three KW and smaller single phase, small capacity units are also available.

Write For FREE Catalog Folder

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

If you write maker identify as IEN - 13429

Speed up Production!

Feed Parts
• Single File
• In Oriented Position
• Automatically
• At Controlled Rates

SYNTRON

PARTS FEEDERS

INCREASE CAPACITY of grinders and presses, inspection and packaging devices, and other automatic processing equipment. Feed without damage, parts of most sizes, shapes and materials at reduced costs. WRITE today for Free Catalog Folder, or send details of your problem along with sample parts for testing to . . .

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

USEFUL INFORMATION

(Continued)

If you write maker identify as IEN - 13430

NICKEL ALLOYS . . For permanent magnets are reviewed by technical booklet as to types, properties

International Nickel Co.
67 Wall St., Room 703, New York 5, N. Y.

New edition is announced for the company's booklet, "Nickel Containing Alloys for Permanent Magnets", copyright 1949. It reviews commercially available permanent-magnet alloys, particularly those in the Alnico group, along with recent developments, other magnetic alloys, stability, applications.

If you write maker identify as IEN - 13431

PHOTOGRAPHY . . Industrial handbook of information on materials, processes and techniques

Eastman Kodak Co.
341-45 State St., Rochester 4, N. Y.

Four sections make up new "Kodak Industrial Handbook", a loose-leaf hard-cover book that lists at $4. The first describes Kodak reproduction materials, tells how to use them in photocopy and other work. The second is on microfilming, tells about equipment, methods, materials and storage. The third covers photography through the microscope.

Most interesting to us was the fourth section, "Making Service Pictures for Industry". This tells how to use photography in the plant for operator training, layout, reports, engineering, research, purchasing.

If you write maker identify as IEN - 13432

PHOTOGRAPHY . . Technical book of up-to-date information on high speed photography

Society of Motion Picture & Television Engineers
40 West 40th St., New York 18, N. Y.

"High Speed Photography," Vol. 4, is new 172-page assembly of information on the subject, mostly in the form of articles reprinted from the Society's Journal. It reviews recent developments in the field, shows a number of practical applications. List price is $2.50.

If you write maker identify as IEN - 13433

PRESSES . . Manual control is the feature of house publication issue on company's hydraulic press

Denison Engineering Co.
1158-62 Dublin Road, Columbus 16, Ohio

Safety is the first of several subjects described in Issue No. 6 of the Denison Press devoted to manual control features of the company's hydraulic press. Diagrams show how the control valves work. New touch control is covered in one article. Three application examples are given.

If you write maker identify as IEN - 13434

PROCESSING . . How to recover metals from dilute solution by ion exchange is told in reprint

Permutit Co.
330 W. 42nd St., Room 700, New York 36, N. Y.

Recent talk by C. F. Paulson, engineer with the company, has been reprinted in 12-page bulletin form with the title, "Metal Recovery by Ion Exchange". It gives a number of examples on how metals can be recovered from acid plant waste solutions by ion-exchange methods, both by cation and anion exchange, as well as recovery of electroplating wastes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13435

SYNTRON

"Automatic"

BATCH WEIGHING

. . . features ACCURACY of Batch
Simple CONTROL Selectivity
Improve Product Quality

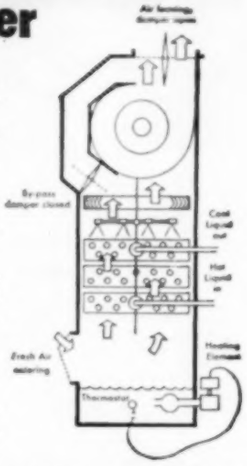
Vibrators on bins and hoppers keep the materials free-flowing. The vibratory feeders automatically filling scale hoppers to exact weight and discharging onto secondary vibratory feeders, smoothly emptying each accurately weighed batch into mixers, blenders, belt conveyors, etc.

Write for FREE Illustrated Catalog Folder

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

If you write maker identify as IEN - 13436

NIAGARA Aero Heat Exchanger



1. Extends quenching capacity without extra water or cooling tower.
2. Quickly pulls down heat at initial peak load of Quenching.
3. "Balanced Wet Bulb" Control holds quench bath at proper temperature, heating if needed to start after shut-down, and cools or heats by automatic control.
4. Saves cleaning expense as compared to cooling tower which picks up acids and fumes from air.

APPLICATIONS
Quench Oils
Cutting Oils
Lubricating Oils
Cooling Water

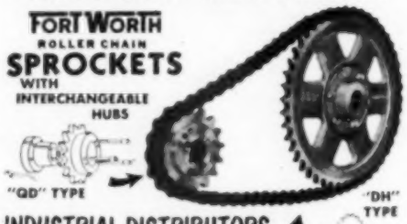
For help in increasing production, saving of cooling water, write for Bulletin No. 120. Address

NIAGARA BLOWER COMPANY
Over 35 Years of Service in Industrial Air Engineering
Dept. EN, 405 Lexington Avenue New York 17, N. Y.
Experienced District Engineers in all Principal Cities of U. S. and Canada

If you write maker identify as IEN - 13437

IMMEDIATE DELIVERY
WITHOUT REBORING!

FORT WORTH
ROLLER CHAIN
SPROCKETS
WITH INTERCHANGEABLE HUBS



INDUSTRIAL DISTRIBUTORS
CAN DELIVER FROM
STOCK
WITHOUT DELAY
FOR REBORING

Fort Worth Sprockets
Offer Many Advantages
• Actually Fits Shaft Better
• Reduces Cost of Spares
• Simplifies Changes
• Cuts Replacement Costs

HUBS ALSO FIT Fort Worth TRANSCO V-BELT SHEAVES

CATALOG 300-C
Shows list prices and dimensions of stock QD & DH sprockets. Chain dimensions and drive recommendations are in easy-to-use form.

FORT WORTH STEEL AND MACHINERY CO.
Dept. 212, 3600 McCart St., Fort Worth, Texas

If you write maker identify as IEN - 13438

New, Dual V-Belt Drive
— eliminates gears . . . there are no gears to strip or wear and require costly replacement — gives velvet-smooth operation without gadgets . . . there is no 'bucking' or 'jerking' that damages work — provides 'cushion' action that adds extra life to the motor.

2-11/16" Cut
8-1/2" Blade
6000 RPM Blade Speed

SYNTRON Portable

ELECTRIC SAW

Dual V-Belt Drive permits a faster drive for smoother, cleaner cutting of wood, brick, tile, etc. Its high speed, 6000 RPM Full Load Blade Speed, feeds the blade in—no need to push or ram — gives ease in handling that means less fatigue. There's no need to 'work' a Syntron Saw — it works for you. Here is the saw that is built for hard service — it's no toy. It's made of tough aluminum and steel stampings with a powerful, full ball-bearing motor that develops up to 1½ H.P.

Write for Free Catalog Folder

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

If you write maker identify as IEN - 13439

A New Approach to Fine Weighing . . .

THERE IS NO SUBSTITUTE FOR EXACT WEIGHT

Laboratory personnel lose much time in creative work when ordinary balances are used. The technician can now save time with the EXACT WEIGHT Shadograph, three to four times faster than the ordinary balance. Actually minutes per operation are saved by getting instant readings in a split second. Other features are greater accuracy . . . no parallax readings . . . unit weighs accurate on out-of-level tables . . . frictionless shado edge indication which substitutes light projection indication for mechanical readings . . . sensitivity never before attained with speed of operation (1 Mg). New literature "Shadograph Laboratory Balances" just out. Write for your copy.

EXACT WEIGHT SCALES

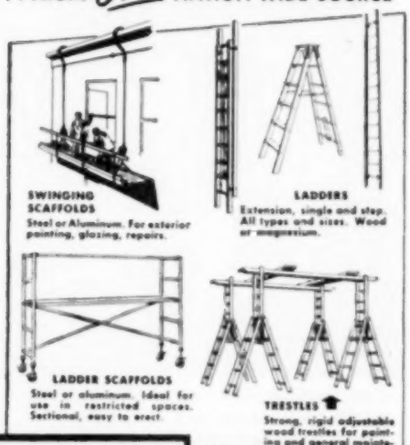
BETTER QUALITY CONTROL
BETTER COST CONTROL

THE EXACT WEIGHT SCALE COMPANY
932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St., W., Toronto 18, Canada

If you write maker identify as IEN - 13440

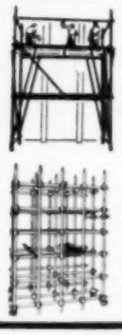
Select the Ladder or Scaffold *Best* for YOUR Job!

. . . FROM *One* NATION-WIDE SOURCE



"TUBE LOX"
tubular scaffolding
(Steel or Aluminum)

Four basic individual parts quickly assembled for work stands, storage racks, rolling scaffolds, interior and exterior scaffolding.



ALUMINUM ROLLING SCAFFOLDS
Sectional, frame-type for general maintenance. Sectional steel rolling scaffolds, also available.

● You save time and money and simplify the selection and delivery of top-quality equipment when you specify "Gold Medal" Ladders and Scaffolds. Made of the finest materials by experienced workers — backed by the *oldest* manufacturers of off-the-ground work equipment — quickly available through a nation-wide network of branch offices or distributors.

Write for your free bulletins showing how these and other "Gold Medal" products are used in industrial plants throughout the country.

Ladders and Scaffolds for Any Purpose — Any Place — Any Time

Gold Medal LADDERS SCAFFOLDING — for Greater Safety...Efficiency...Economy
THE PATENT SCAFFOLDING CO., Inc.

38-21 12th Street • Long Island City 1, New York
Dept. IEN, West Coast Plant: 6931 Stanford Ave., Los Angeles

If you write maker identify as IEN - 13442

TESTING . . Impact instrument for paint, lacquer, finishes on metal

Source: HENRY A. GARDNER LABORATORY INC.
4725 Elm St., Bethesda 14, Md.

List is $185

Resistance to impact is determined with this new instrument by dropping a 2-lb. steel rod on a test panel that has been placed over a ⅝-in. opening in the base plate. The rod is lifted by lifting a pin that extends through a slot in the vertical guide tube. The tube is dimensioned so the rod can be positioned for impact ranging from 2 to 40 in. lb. in steps of 2 inch pounds.

After each impact the test panel is examined for flaking and cracking. Maximum range of 80 in. lb. can be doubled by employing a 4-lb. rod as the impact unit in place of the regular 2-lb. one. Base dimensions are about 5¼ by 11½ inches. 263-10-XX 3-D

If you write maker identify as IEN - 13443

HEATING . . Venturi mixer for air and gas to laboratory burner

Source: RESEARCH VACUUM SUPPLY CO.
3436 W. Montrose Ave., Chicago 18, Ill.

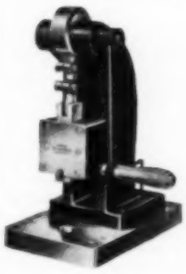
$9.40 and $15.10

Needle valves control the input of both gas and air to this new No. 724 venturi mixer. It is equipped with ¼-in. hose connections for the gas and air supply and for the line leading to the burner. A companion assembly, known as No. 729, has ⅝-in. connections for gas and air lines.

If you write maker identify as IEN - 13444

PRESS . . Crank operated machine for bench mounting, ¾ inch stroke

Source: UNION TOOL CO.
297-301 Norton St., Dept. 13, Rochester 21, N. Y.



Hand crank rotates a cam shaft carrying the pitman and ram in this new punch press. A steel cam operates inside a bronze yoke. A screw, between the pitman and the ram, provides for 1⅛ in. of adjustment from a maximum die space of 2¼ inches. Distance from the center of the ram to the face of the press housing is 1¾ inches. Width of opening in the back is 1½ inches. The press measures 13½ in. in overall height and weighs 46 pounds. It is shear pin protected.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13445

"YANKEE" VISES

for accurate, work holding
START-TO-FINISH

Every operation is lined up square and true in a "Yankee" Vise. Carefully machined . . . top, bottom, sides and front end to give accurate alignment in any position. Easily made into jig. V-grooved hardened steel block furnished with each "Yankee" Vise. Four sizes . . . 1½", 2", 2¾" and 4" jaw widths. Write for "Yankee" Tool Book.

STANLEY

NORTH BROS. MFG. CO.
Philadelphia 33, Pa.

If you write maker identify as IEN - 13446

MERCURY A-310 TRAILER

Corrugated box body

Steel dump body

Standardized for economy
Flexible for every need

Basic design, materials, fabrication of the A-310 Trailer have been standardized through years of rigorous testing under severe industrial service. Sizes, deck specifications, body types and superstructure are flexible to the requirements of each individual user. Wheel type and coupling system are optional. The result is the Mercury A-310 Trailer . . . standard of industry for efficient, low-cost, load carrying service. For complete details write for Bulletins 160 and A999.

MERCURY
FORK TRUCKS · TRACTORS · TRAILERS

MERCURY MANUFACTURING COMPANY
4132 So. Halsted St., Chicago 9, Ill.

If you write maker identify as IEN - 13447

SPRACO NOZZLES

Write for NOZZLE CATALOG *to*
SPRAY ENGINEERING CO.
110 CENTRAL STREET • SOMERVILLE 45, MASS.

If you write maker identify as IEN - 13448

Over Half of America's Top Companies Use "Speed Sweep"

THE BRUSH WITH THE STEEL BACK

BECAUSE it sweeps faster and cleaner, and outlasts ordinary brushes 3 to 1, Speed Sweep has become the No. 1 sweeping tool of American Industry — used by over 50,000 firms. Whether you use a few or a lot of brushes, you'll find it pays to switch to Speed Sweep.

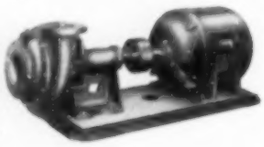
Write for styles, sizes and prices.

MILWAUKEE DUSTLESS BRUSH CO.
MILWAUKEE 3, WISCONSIN

If you write maker identify as IEN - 13449

One pump
that does many different jobs

- General Water Service
- Slurries
- Factory Wastes
- Transfer
- Processing
- And Many Others



GOULDS Fig. 3169—Single-stage open impeller centrifugal pump. Available with motor or belt drive. Capacities to 1000 G.P.M. Heads to 290 ft.

GOULDS centrifugal pumps (Fig. 3169) offer tremendous versatility. Their modern hydraulic design assures high operating efficiency with relatively low power consumption. Their simple, sturdy construction spells long service life and low maintenance. Interchangeable parts reduce inventories. Call your Goulds representative for full details, or write for Bulletin 720.4.

Goulds PUMPS INC. Seneca Falls New York

If you write maker identify as IEN - 13450

MAINTENANCE DOWN... SAVINGS UP...

FIG 970A

with NUGENT GRAVITY OIL FILTERS for TURBINE SYSTEMS

Here's what you get with Nugent Gravity Oil Filters:

1. Continuous operation. Multiple Filter bags may be cleaned independently without shutting down.
2. Efficient water separation and acid neutralization. Will not remove additives.
3. Automatic alarm when cleaning is needed.
4. Over 95% oil savings.

Write for complete details on Nugent Gravity Oil Filters for steam or turbine engines and other machinery

Wm. W. Nugent & Co., Inc.
418 N. Hermitage Ave. CHICAGO 22, ILLINOIS
Est. 1897

Oil Filters, Oiling and Filtering Systems, Telescopic Oilers, Oiling Devices, Sight Feed Valves, Flow Indicators . . . Representatives in Principal Cities

If you write maker identify as IEN - 13451

Clean CONVEYOR BELTS Last far Longer!

INSTALL S-A

Multiple Blades Keep Belt Clean and Dry

SPRING-TYPE
CONVEYOR BELT CLEANER

• Removes wet or dry material from belts before they can be ground into belt by return pulleys and idlers. Adjustable to fit any conveyor. No moving parts, no power required. Easily installed by your own plant personnel. *Cost little, saves a lot!*

MAIL COUPON FOR FULL DETAILS

STEPHENS-ADAMSON MFG. CO.
Standard Products Division
231 Ridgeway Ave., Aurora, Ill.
Please send me Bulletin 651 on Conveyor Belt Cleaners.
Name
Company
Address
City Zone State

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 13452

PUMPS . . Problems in selection and installation of rotary pumps are reviewed in booklet

Viking Pump Co.
49 Calvert St., Cedar Falls, Iowa

"Studying the Installation", from the standpoint of forestalling future trouble, is new 8-page technical booklet written by W. E. Bakewell, company's Chief Field Engineer. In it he defines some 10 terms dealing with pump head, viscosity and the types of liquids that may be encountered, problems involved in pipe friction, construction materials.

If you write maker identify as IEN - 13453

RECORD KEEPING . . Suggested purchasing procedures based on the company's Kardex equipment to provide facts

Remington Rand Inc.
315 Fourth Ave., Room 1618, New York 10, N. Y.

Your own purchasing department may be interested in one or more of the procedures suggested in new 20-page Booklet X-1202, "Purchasing Procedures that Save Time and Money". First is a check list of routine buying questions which should be answered in seconds. Then follows information on methods for processing requisitions, procuring bids, placing orders.

If you write maker identify as IEN - 13454

REFRIGERATING . . Bulletin traces history of the company and the development of its equipment

Frick Co.
320 Broadway, Waynesboro, Pa.

"Centennial History", new 50-page booklet, starts with George Frick in 1826, follows him to 1852 when he set up Frick Company, then traces the company's history decade by decade up to the present. Plant pictures, sample advertisements, business forms and letters are reproduced along with a summary of national activity at the time.

If you write maker identify as IEN - 13455

RUBBER PRODUCTS . . Bonded-to-metal parts described as to design, application and performance

Acushnet Process Co.
760 Belleville Ave., New Bedford, Mass.

Supplement A is new 8-page bulletin intended to bring you up to date on the possibilities inherent in rubber-to-metal bonded parts. It tells some of the applications that can be made, design factors to consider, selection of rubber compound, processes employed. A rating chart covers six types of rubber and 10 types of metal.

If you write maker identify as IEN - 13456

TESTING . . Use of the spectrograph on lubricating oil provides a check on engine wear

American Locomotive Co.
10 N. Jay St., Schenectady, 5, N. Y.

Nine technical papers delivered at a symposium sponsored by the company are reported in new 78-page book, "Spectrographic Analysis of Diesel Engine Lubricating Oil". They tell how spectrographic analysis gives a quantitative indication of the metallic elements present in an oil sample. The analysis thus provides a check on internal condition of the engine components such as pistons, piston rings, bearings.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13457

PHILLIPS

LEARN HOW VAPOR DEGREASING CAN CUT COSTS AND INCREASE YOUR PRODUCTION

SEND FOR YOUR FREE COPY OF PHILLIPS' NEW DEGREASING BULLETIN

HERE's a new bulletin that contains valuable information on how modern vapor degreasing speeds up production in modern factories by making metal cleaning operations faster and more economical. Listed below are some of the features of this new book:

WHAT DEGREASING IS — A full description of what vapor degreasing is and what it will accomplish for you.

HOW DEGREASERS WORK — A series of photographs and written description shows what happens in the degreasing process.

DEGREASER APPLICATIONS — Illustrates number of different applications of degreasers to solve metal cleaning problems in various industries.

COMPLETE LINE OF STANDARD DEGREASERS — Describes Phillips' full line of standard equipment, including batch type, combination, rotomatic, and conveyorized models.

SPECIALLY ENGINEERED UNITS — Tells about Phillips' service in designing special degreasing units for solving unique metal cleaning problems.

Phillips MANUFACTURING COMPANY
3461 Touhy Avenue • Chicago 45, Illinois
Engineered Metal Cleaning Equipment

If you write maker identify as IEN - 13458

18 WAYS TO SAVE TIME & MONEY!
with the
Mead Industrial Burring Machine

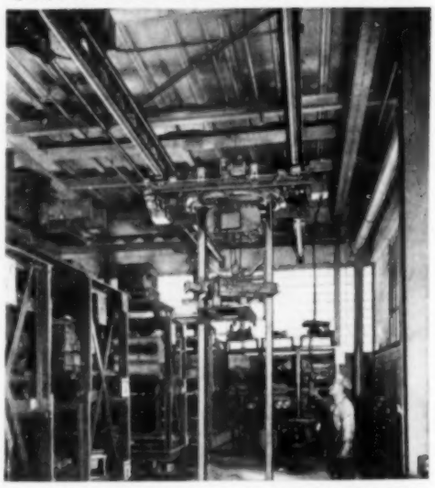
Wood-Plastic-Metal

New circular explains, illustrates 18 ways in which the Mead Industrial Burring Machine saves time and money—also contains Special Grit Guide. Every industrial plant needs this "Jack-Of-All-Trades" machine. Your burring can be done in "free time"—install these machines by every machine tool which leaves burrs. Grinds, finishes both outside and inside cut-out openings. Immediate delivery in most cases. Write for the informative Money-Saving circular now.

MEAD SPECIALTIES COMPANY
4114 NO. KNOX AVE. DEPT. EA-122 CHICAGO 41, ILL.

If you write maker identify as IEN - 13459

60% MORE DIES NOW STORED



ONE MAN NOW CONTROLS DIE STORAGE WITH 60% MORE DIES STORED IN THE SAME FLOOR SPACE

Without extra building, a large Mid-Western manufacturer of internal combustion engines has solved a difficult die storage problem by installing a Louden Monorail System. Capacity of the storage area has been jumped 60%, "housekeeping" efficiency has been increased, while the labor force has been reduced from several men to one-man control.

The "tiering" trolley, operating on a double-girder crane with turntable, permits easy, accurate positioning of dies in assigned bins. Complete push-button operation allows one-man control. The skid method of handling eliminates damage caused by slings or dropping.

FREE BOOK . . . Case histories of successful Monorail applications. Write for "Economical Material Handling" today.

THE LOUDEN MACHINERY COMPANY
7211 S. Superior Ave., Fairfield, Iowa

Louden
OVERHEAD MATERIAL HANDLING

If you write maker identify as IEN - 13461

TOOL CRIB CONTROL

New illustrated bulletin presents step-by-step procedure used profitably in hundreds of plants.

How it works to—

- Record each employee's tools or gages, preventing theft and loss;
- Recover idle tools;
- Cut crib inventories;
- Reduce tool breakage;
- Locate each tool, loaned or in crib;
- Eliminate delays, saving man and machine time;
- Stop arguments and otherwise speed service;
- With no increase in crib personnel—

All described in Folder A-510 IEN

Procedure readily adapted to control of gages, tool kits, and unusual requirements.

Write for your copy today to:

THE McCASKEY REGISTER COMPANY • ALLIANCE, OHIO

McCASKEY INDUSTRIAL CONTROLS

PRODUCTION • TOOLS • INVENTORY • COSTS • MAINTENANCE

If you write maker identify as IEN - 13462

4-ton loads of 4-ft. x 12-ft. wallboard stored ceiling-high at Newark Plaster Co., So. Kearny, N. J.

HIGH, WIDE and THEN SOME...

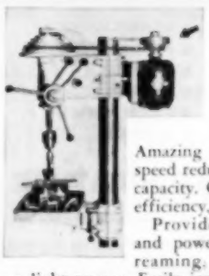
Long loads, loose loads, whoppers, or what have you . . . Towmotor makes short shift of putting *any* capacity-cargo anywhere you want it, right up to the rafters. Write for your copy of "Man-Hour Thieves," Towmotor's new guide to successful cost cutting procedures, and name of your nearest Towmotor Representative. Towmotor Corporation, Div. 26, 1226 E. 152nd St., Cleveland 10, Ohio.

TOWMOTOR THE ONE MAN-BAND — FORK LIFT TRUCKS and TRACTORS SINCE 1919

RECEIVING • PROCESSING • STORAGE • DISTRIBUTION

If you write maker identify as IEN - 13463

New **"PULL-GEAR" SPEED-REDUCING PULLEY Increases Drill Press Capacity**



Amazing new internally geared speed reducer doubles drill press capacity. Greater power, greater efficiency, greater productivity. Provides the correct speed and power for larger drilling, reaming, tapping and boring on light presses. Easily installed in five minutes. Adaptable to all type machines. Spindle speed range approximately 45 to 2000 RPM. Write for literature.

Made in 3 Motor Shaft Sizes ½" • ⅝" • ¾"

Some Territories Open to Jobbers

THE PULL-GEAR CO. WRITE FOR LITERATURE

21125 Dequindre St. Hazel Park, Michigan

If you write maker identify as IEN - 13464

SNOW PLOW . . Engine driven, gathers and throws snow to one side

Source: JARI PRODUCTS INC. 2936-40 Pillsbury Ave., Minneapolis 8, Minn.

Cuts 16 inch path

Rotary rake, driven by the engine on this recently improved assembly of the company's Jari, Jr. snow plow, bites into snow ahead of the machine as it moves forward under its own power. It cuts a path 16 in. in width, picks up the snow as it cuts and directs it through a chute to either side. The plow will handle 18 ton of snow per hour. It is driven by a 4-cycle Briggs & Stratton engine.

The new construction provides a number of attachments, a reel mower in particular that can be used for lawn cutting in the summer. The machine also can cut down weeds.

If you write maker identify as IEN - 13465

CLEANING . . Impregnated cloth to wipe a surface prior to painting

Source: INDUSTRIAL TAPE CORP. Highway One, New Brunswick, N. J.

Thirty cents per cloth

Permacel tack cloth has been added to the company's lines of equipment and supplies employed in cleaning and painting operations. The cloth measures 18 by 36 inches. It is folded and packaged in cellophane. When it is rubbed lightly over a smooth metal surface it will pick up all dust particles, lint, abrasive and paint particles so the surface can be painted and the resulting finish will be smooth.

If you write maker identify as IEN - 13466

SCREWDRIVING . . Hand tool, adjustable lengths, ¼ in. blade

Source: E. L. DYE CO. 14-18 W. Main St., Norwalk, Conn.

The blade detaches

Four models, each adjustable to a number of lengths between 3½ and 14¾ in., are included in the company's new Click-It screwdriver line. A chuck is located on the forward end of the Tenite plastic handle. It is pulled back to release the blade which then can be moved in or out to a new detent position for length adjustment. Blade styles include regular, recess, Clutch-Head and Phillips to meet a range of requirements.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13467

THE SERVICE RECORDER COMPANY
1375 Euclid Avenue • Cleveland 15, Ohio

If you write maker identify as IEN - 13468

wear a DUPOR No. 20 Water-Cooled Respirator

Double sponges dipped in water before wearing provide cool breathing even under hot, smoky conditions. Recommended for use of workers in paint shops, foundries, steel mills, oil refineries, chemists, firemen, etc. Face mask is of rubber, equipped with DUPOR "controlled breathing" valves. Wearer has a panorama view with no blind spots. Glasses or goggles can be worn with unit.

Sample sent $2.50 pp

H. S. COVER
South Bend, Ind.

If you write maker identify as IEN - 13469

Kimwipes*

INDUSTRIAL TISSUES

End the dangers of dirty, scratchy cloths used over and over again! KIMWIPES* industrial wiping tissues are far safer—because they're *disposable*. So inexpensive, a fresh, clean tissue can be used for each application—then thrown away!

KIMWIPES are clean, soft, pleasant to handle—100% free of abrasive matter. Each tissue is a "man's handful" and can absorb up to 16 times its own weight in liquids. Recommended for wiping safety goggles and shields, wiping up light oils and hazardous chemicals, cleaning instruments and highly finished surfaces. In the handy "serve-up" package, KIMWIPES can be conveniently located at several spots in your plant—they serve just *one* at a time.

Order a supply today. For further information, fill out coupon below or write to Kimberly-Clark Corporation, Neenah, Wisconsin.

KIMWIPES INDUSTRIAL WIPING TISSUES — A Product of **Kimberly-Clark**

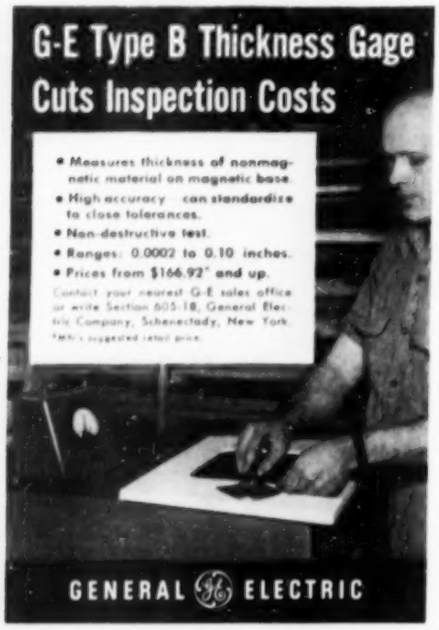
*T. M. REG. U. S. PAT. OFF. & CAN.

KIMBERLY-CLARK CORPORATION
Neenah, Wisconsin — Dept. DD-12
Please send me Kimwipes literature.

Name _____
Firm _____
Address _____
City _____ *Zone* _____ *State* _____

If you write, make identify as IEN - 13471

G-E Type B Thickness Gage Cuts Inspection Costs



- Measures thickness of nonmagnetic material on magnetic base.
- High accuracy . . . can standardize to close tolerances.
- Non-destructive test.
- Ranges: 0.0002 to 0.10 inches.
- Prices from $166.92* and up.

Contact your nearest G-E sales office or write Section 605-18, General Electric Company, Schenectady, New York.
*Mfr's suggested retail price.

GENERAL ELECTRIC

If you write, make identify as IEN - 13472

Look inside that safety switch!

It may look good on the outside but it's the stuff inside that does the work. Take this Trumbull HCI:

The *pole units* are self-contained for easy removal without disconnecting wiring and use *silver-plated current-carrying parts . . . arc-resisting, linen-melamine insulating parts*. U-shaped *movable conductors* bring gap between line and load contacts to less than ⅛ inch reducing possibility of arc damage. Exclusive design of *pole units* and *contacts* takes advantage of magnetic repulsion principle to give maximum arc-quench and contact bind. *Operating mechanism* uses a *roller-cam action* and a *multiplying linkage* with a *powerful spring* that always throws it to full OFF or ON. Write for Bulletin TEC-10.

TRUMBULL ELECTRIC

DEPARTMENT OF GENERAL ELECTRIC COMPANY
PLAINVILLE, CONNECTICUT

If you write, make identify as IEN - 13473

Your conveyor dollars go farther with LINK-BELT trolleys

LINK-BELT

LINK-BELT COMPANY
Dept. 21, 307 N. Michigan Avenue
Chicago 1, Illinois

Write for Folder 2241-B

USEFUL INFORMATION
(Concluded)

If you write, make identify as IEN - 13474

THREADING . . Useful information on pipe threads describes three standard types, compares differences

Detroit Tap & Tool Co.
8613-17 E. 8-Mile Road, Baseline, Mich.

"Pipe Thread Manual", new 24-page booklet, uses drawings and dimension tables to present information on American Standard, Dryseal, Military Aeronautical pipe threads. It covers design features, basic dimensions, drill sizes for tapped holes, tapping tools, gages. Please use your letterhead.

If you write, make identify as IEN - 13475

VENTILATING . . New service manual on company's blowers, air conditioners, unit heaters

Clarage Fan Co.
617-21 Porter St., Kalamazoo 16, Mich.

Stated purpose of new 68-page Service Manual is "to help you obtain the utmost in efficient, dependable performance from your Clarage Equipment". Illustrated instructions cover installation, initial operation, maintenance of centrifugal blowers, ventilating fans, air conditioners, unit heaters.

If you write, make identify as IEN - 13476

WELDING . . Picture booklet shows a variety of uses for welding electrodes

Ampco Metal Inc.
1743-47 S. 38th St., Milwaukee 46, Wis.

Fifty-two applications are shown pictorially in special Third-Quarter issue of Ampco Welding News, company's house publication. These applications range from straight welding fabrication with aluminum-bronze electrodes to hard facing and joining dissimilar metals. Your name will be added to the mailing list upon request.

If you write, make identify as IEN - 13477

WIRE CLOTH . . Useful technical data on wire cloth and filter cloth in 126-page catalog

Multi-Metal Wire Cloth Co.
1348-52 Garrison Ave., New York 59, N. Y.

Planning information to assist you in design of filters, strainers, washers and other equipment involving wire cloth is given in detail by Catalog 50, issued to a limited list in 1950, now available on request. This information includes an available test kit of samples and data, a draftsman's guide, research work on particle retentivity, tables. Main section covers meshes, materials, application suggestions, fabricated parts.

If you write, make identify as IEN - 13478

WIRE ROPE SLINGS . . Useful information on seizing, splicing, socketing in new 106-page catalog

Rochester Ropes Inc.
52 Rochester St., Culpeper, Va.

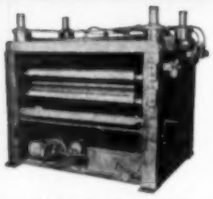
Selection and use information occupy the first 82 pages of new "Sling Handbook", starting with a pictorial index and continuing with dimensional tables on a variety of designs. There is a safe load table, a section on fittings, and instructions on how to order. Feature is a 24-page useful-information section with a color-coded diagram and step-by-step instructions on making a Liverpool thimble splice.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write, make identify as IEN - 13479

UNION AUTOMATIC COMPOUND SPREADERS

SAVE *8 WAYS



1 "Die life increased 75%."
2 "Production increased 20%."
3 "Compound saving of 16%."
4 "Rejects reduced 10%."
5 "One helper eliminated."
6 "Paid for itself in 54 days."
7 "Able to use salvage stock for some operations."
8 "25,000 more pieces before changing dies."

MODELS TO FIT ANY STOCK UP TO 96" WIDTH

Union is the foremost designer and manufacturer of roller coating machines for application of drawing or stamping compounds and protective coatings.

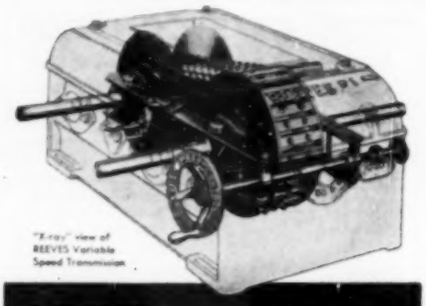
Models may be equipped with hardened steel, or with neoprene-covered rolls—also with heated or cooled rolls—to meet your individual requirements.

*The above claims are based on actual statements by users, both large and small—a number of whom have ordered a second and third machine.
Complete data and agent's name on request. Union will design and/or manufacture coating machines to meet your specific requirements.

UNION TOOL CORP.
316 E. MARKET ST., WARSAW, IND., U.S.A.

USERS SAY UNION CUTS COSTS, SPEEDS PRODUCTION

If you write, make identify as IEN - 13480



"X-ray" view of REEVES Variable Speed Transmission.

REEVES Variable Speed Transmission

Provides positive, accurate speed changes—without stopping machine—to meet the requirements of every operation and operator, under every changing condition. Easily applied to machines in service—requires no special tools or training to maintain. Horizontal and vertical designs, open or enclosed—in sizes fractional to 87 hp; speed ratios 2:1 through 16:1; manual or automatic controls. Internal operating parts also available for easy incorporation within the framework of your machines. Get full details on the complete REEVES line. Write for free Catalog IN 71 a-G

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

If you write, make identify as IEN - 13481

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . models for various purposes.

SOLD AT A LOW COST

...and the cost is especially low because it pays for itself many times...saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE—LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

Be sure to write for illustrated literature and prices

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

If you write maker identify as IEN - 13483

IF *Your* VALVES ARE DIFFICULT OR COSTLY TO OPERATE...

install *Ledeen* VALVE ACTUATORS

• If you require automatic controls or power operation — or if your plant uses many valves in remote or inaccessible spots, you can save manpower and simplify your operations by installing Ledeen Valve Actuators. Adaptable to most any make, size and type of valve to operate against any line pressure, for any fluid medium, with any pressure. Positive, rugged, economical.

Write for Bulletin 512

Ledeen Mfg. Co.
1602 San Pedro
Los Angeles 15, Calif.

VALVES • CYLINDERS
AIR-HYDRAULIC
PUMPS & BOOSTERS
VALVE ACTUATORS
AIR HOISTS

If you write maker identify as IEN - 13484

NEW Stanley "MIGHTY MIDGET"

¼" Heavy-Duty ELECTRIC DRILL

Here is a fresh fist-full of power built for heavy-duty production drilling. It's the lightest, the most powerful ¼" drill ever . . . the new Stanley "MIGHTY MIDGET".

Compare this "MIGHTY MIDGET" with other ¼" drills... check point for point on the features you get for the money you pay. And remember . . . you pay no "extras" for all the extra Stanley "MIGHTY MIDGET" features.

Send for catalog describing cost-cutting Stanley Electric Tools or ask your distributor for a demonstration. He has them in stock . . . ready to work for you. Stanley Electric Tools, 414 Myrtle Street, New Britain, Connecticut.

COMPARE—only the Stanley "MIGHTY MIDGET" offers ALL these features—

- Lightweight — only 3⅛ lbs. — most powerful drill of its size.
- Compact — 7⅛", long — easy to handle in close quarters.
- Balanced design — trigger-grip handle with auto-safety lock.
- Highly polished die-cast aluminum housing.
- Seal-type ball bearings, helical alloy steel gears.
- Removable chuck guard for better control, extra.
- Models in 6 different speeds — 5000, 3500, 2500, 2000, 1000, and 600 r.p.m.
- 3-jaw geared chuck, threaded to spindle.
- Brushes fully enclosed — protected from dirt and misuse.

STANLEY

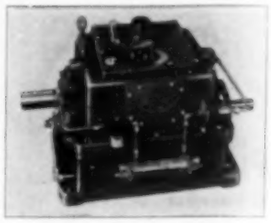
Hardware • Tools • Electric Tools
Steel Strapping • Steel

Reg. U.S. Pat. Off.

If you write maker identify as IEN - 13486

DRIVE . . Gear transmission for 2, 3 or 4 lever selected speeds

Source: PHILADELPHIA GEAR WORKS
G. St. at Erie Ave., Philadelphia 34, Pa.



Ask for Bulletin CSU-52

Speed Change Unit designates a new standardized line of herringbone gear drives providing definite ratios of speed reduction, speed increase or a combination of the two. Each unit is a self-contained assembly with constant speed input shaft and adjustable speed output shaft mounted in ball or spherical roller bearings of self-aligning design sufficiently large to permit overhung loading. Oil seals prevent leakage from the housing and protect the bearings. Speed selection is made by turning a lever on the housing top to position the involute spline clutches. Lubrication is by splash or pump.

Reduction ratios are maximum at 5 to 1 in a single reduction set and, where necessary, it is possible to make one or more speed increases, in which case the increase ratio is maximum at 1 to 2. Special two speed units are available with one ratio to 55 to 1 and the other at 5 to 1 or greater. Two-speed units also can be obtained with one ratio to 25 to 1 and the other at 1 to 1.

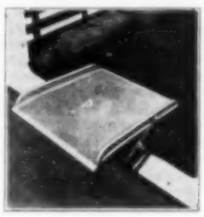
The two speed unit has base dimensions ranging from about 13 to 48 in. in line with the shafts and from 8 to 45 in. at right angles. Overall clearance height is about 12 to 49 inches. Input shaft diameter is ⅞ to 5⅛ in. and thermal rating is 10 to 258 hp. The three and four speed units are assembled in the same housing sizes. They range from 15 to 48 in. in line with the shafts, from 10 to 45 in. at right angles and have clearance height from 14 to 46 inches. The input shaft diameter is 1¼ to 5⅛ in. in the 10 available sizes. Thermal rating is 10 to 193 hp. in the three speed assembly. It is 15 to 155 hp. in the four speed design.

The company has assembled technical data, description, illustrations and procedure information to assist in correct unit selection, along with parts lists, dimension data, sectional views in a new 24-page bulletin.

If you write maker identify as IEN - 13487

FLOORS . . Magnesium dockboard bridges between platform and truck

Source: MAGLINE INC.
1930 Mercer St., Pinconning, Mich.

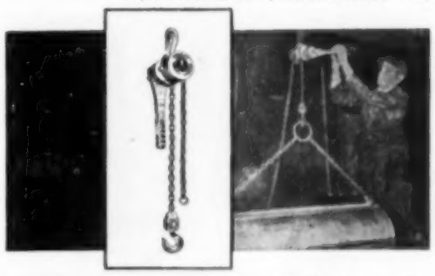


One man lifts it

Two ratings are 1,000 and 2,000 lb. per axle in this new design of the company's magnesium dockboard. It is available in a range of sizes to stand between a loading platform and a standard vehicle truck. Crowned construction compensates for height difference between the truck and the platform level. The board can be reversed when the truck bed is lower than the platform. A new drop lock anchors the board.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 13488



WORKS FAST IN TIGHT SPOTS 'Tugit' is tops for all lifting, pulling and stretching jobs where space is limited. It is small, light, portable — operates smoothly at any angle. Built like a hoist, with efficient gearing, automatic load brake and anti-friction bearings, 'Tugit' is easy on muscles, fast and safe in action. A 40-lb. pull on the lever lifts a one-ton load — spots it as close as 3/32 of an inch.

If your maintenance and repair jobs, construction, road or service work call for lifting, pulling, stretching and tightening — 'Tugit' is the handiest tool you can use. It fits any tool box. Available in one and two-ton sizes. Send for Bulletin 388.

'TUGIT' HOISTS

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

Builders of "Show-Boy" Cranes, 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves, 'American' Industrial Instruments.

If you write maker identify as IEN - 13489

NEW...LIGHTWEIGHT...NON-CORROSIVE

UDYLITE LAMINEX TANKS

Udylite Laminex tanks of molded fiberglass have many of the advantages of aluminum or stainless steel yet cost less.

In addition to this important low initial cost, Udylite Laminex tanks have these unique features—

- Non-corrosive inside and out. They're easy to clean, too.
- Electrically non-conductive.
- Extremely lightweight. A 2'x2'x3' tank weighs only 60 lbs!
- If accidentally damaged, can be quickly and easily repaired, in place.
- Capacities are from 25 to over 500 gallons, and depths up to six feet are available.

For full information on prices and sizes, call your Udylite Technical Man or write direct.
THE UDYLITE CORPORATION
DETROIT 11, MICHIGAN

THE Udylite CORPORATION

If you write maker identify as IEN - 13490

SYNTHETIC SAPPHIRE *for*

Resistance to Wear
Outlasting hardened steel and cemented carbides up to 5,000 times.

Resistance to Friction
Affording very low friction characteristics due to hardness and surface continuity.

Resistance to Heat Distortion
Retention of form at temperatures up to 1,000° C.

Retention of Insulating Properties
Excellent dielectric properties over a wide range of temperatures.

Synthetic Sapphire can be polished by flame or diamond polishing; it can be formed and bent by flame. Polished sapphire surfaces keep free of dirt, lint, and in many anti-friction applications, need not be lubricated.

Call or write the LINDE office nearest you for a copy of the booklet, "LINDE Synthetic Crystals For Industry". Ask for Form 7560.

LINDE AIR PRODUCTS COMPANY
A DIVISION OF UNION CARBIDE AND CARBON CORPORATION
30 East 42nd St., New York 17, N. Y. Offices in Other Principal Cities
In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

If you write maker identify as IEN - 13491

SAVE MAN HOURS!

HEIN-WERNER C-21
Push and Pull "Jackit"

Eliminate the need for crews, helpers, or complicated set-ups to handle heavy-duty bending, pressing, lifting, clamping, moving, and straightening operations. One man can do all these jobs faster, easier, and better when equipped with a Hein-Werner C-21 Push and Pull "JacKit".

The C-21 includes a 20-ton "Push and Pull" Hydraulic Jack and 15 carefully selected attachments packed in a sturdy wooden chest. Available in models of 4, 10, and 20 tons capacity complete in chest or railaway metal stand. See your industrial supply distributor or write us.

HEIN-WERNER CORPORATION
Waukesha·Wis.

Hein-Werner HYDRAULIC JACKS

If you write maker identify as IEN - 13492

Provide an
ACCURATE PRINTED RECORD of PRODUCTION
with Model S-PVR-1
PRODUCTIMETER

This printing counter installed on a 50 ton Niagara Punch Press performs a dual role:

1. It registers exact number of parts produced
2. It provides a PRINTED record of production (in multiple copies, if desired)

Record systems using this method reflect the accuracy and savings that result from clear, clean records with no errors due to misinterpretation.

Send for Catalog No. 71

DURANT MANUFACTURING CO.
1930 N. Buffum St., Milwaukee 1, Wis.
120 Orange St., Providence 3, R.I.
Representatives in Principal Cities

If you write maker identify as IEN - 13493

Performance records prove.....

HOMESTEAD VALVES...are a "Better Buy"

A pottery* in Ohio tried practically every type of valve on its "slip" lines, but the highly abrasive material at 125 pounds pressure ruined the average valve in a few months—in some cases, in a few weeks. Our engineers recommended HOMESTEAD Cam-Sealed VALVES with special, hard-faced plugs and bodies. The potters installed them on all "slip" lines in the plant.

Performance records kept during the past several years show that the HOMESTEADS are lasting more than three times longer than any other valve previously used. Savings in replacement and maintenance costs repay many times over the first cost of the HOMESTEADS.

For more than 60 years HOMESTEAD VALVES have been licking equally tough jobs on scores of services in many different types of industries. Chances are there's a valve problem they can solve for you. Why not ask our engineers about it? No obligation.

*Name on request

Write today for VALVE REFERENCE BOOK No. 39

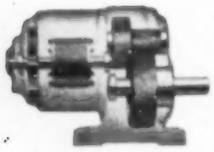
HOMESTEAD
VALVE MANUFACTURING COMPANY
Serving Since 1897
P. O. Box 85 Coraopolis, Pa.

If you write maker identify as IEN - 13494

MANUFACTURER REPORTS SLO-SPEED ADVANTAGES

Slo-Speeds are selected to drive the poultry processing equipment manufactured by Gordon Johnson Co., Kansas City, Mo., for the following reasons:

1. Sealed bearings cut maintenance to a minimum.
2. Streamlined and compact design add to appearance of their equipment.
3. Quiet operating gears eliminate unnecessary noise and improve operators' morale and efficiency.
4. Sterling's service, engineering data and prompt deliveries.



70 ILLUSTRATIONS showing how Sterling Electric Power Drives reduce production costs. Write for Bulletin No. D-127.

STERLING OUTSTANDING FEATURES:

Simplified gear system—balanced design—compact—rugged—highly efficient—abundant lubrication—low output shaft—positive oil seals—Herringbone Rotor—protected—streamlined—direct through ventilation—quiet operation—AGMA speeds—extremely long life—every unit will operate in any position.

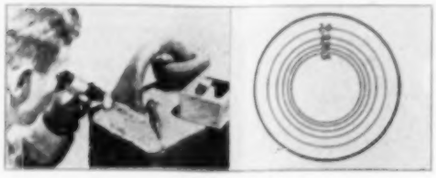
STERLING ELECTRIC MOTORS

Plants: New York City 56; Van Wert, Ohio; Los Angeles 22; Hamilton, Canada; Santiago, Chile. • Offices and distributors in all principal cities.

If you write maker identify as IEN - 13495

TESTING . . Indentor and microscope read metal hardness, Rockwell C scale

Source: PACIFIC TRANSDUCER CO.
11919-23 W. Pico Blvd., Los Angeles 64, Calif.



List price is $69

Impact indentor mounts a 1/16-in. tungsten carbide ball which it drives with measured impact into the surface of a metal piece to be tested for hardness at that point. The impression is measured by a microscope that forms a second unit in this new two-part hardness testing equipment. The microscope carries graduated circles with hardness indicated in a range from 20 to 60 on the Rockwell C scale. Readings can be made within 1 to 2 points. Hardness tests can be made on large dies, punches, welds, on structural steel, tanks, pipes.

If you write maker identify as IEN - 13496

TUBE . . Extruded Teflon plastic in diameters from 3/16 to 2 inches

Source: ETHYLENE CHEMICAL CORP.
243-47 Broad St., Summit, N. J.

Tube is made to order

The company announces availability of extruded Teflon tube with excellent concentricity, roundness and straightness. Tolerances can be held within 0.005 in. on control of inside and outside diameters. Outside measurement is 3/16 to 2 inches. Inside is 1/16 to 1 7/8 inches. Minimum wall is 1/16 inch.

If you write maker identify as IEN - 13497

VENTILATING . . Exhaust unit discharges bad air, fumes through roof

Source: CLAY EQUIPMENT CORP.
10 Industrial St., Cedar Falls, Iowa

Plain or powered

The pivoted head of this new roof ventilator is mounted on a ball bearing and is equipped with a wind vane so the head will swing to best discharge position as the wind changes. The outlet opening is screened with 14-gage wire. The ventilator is made of 26 gage steel. It and the screen are galvanized. Finish is in aluminum. Two sizes provide 12 and 15 in. flue diameter. Either one can be supplied plain or equipped with a motor driven fan rating 700 cfm. The fan motor mounts prelubricated sealed bearings.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13498

MOBILIFT

Lev-R-Matic DRIVE
FORK LIFT TRUCKS
Low Cost Handling!

- STAND-UP AND SIT-DOWN MODELS
- GAS OPERATED—NO GEARS TO SHIFT
- A SIZE TO FIT YOUR NEEDS

Write for complete specifications or contact your nearest Branch Office.

MOBILIFT CORPORATION
MOBILIFT Lev-R-Matic DRIVE
635 S. E. Main St., Portland 14, Oregon
2317 W. 18th, CHICAGO • 790 Patterson Ave., E. RUTHERFORD, N. J.
2724 Taylor St., DALLAS • 113 Spring St. N. W., ATLANTA
2730 San Pablo Ave., BERKELEY

If you write maker identify as IEN - 13499

Your Entire Stock of Drills... Seen at a glance

HUOT DRILL DISPENSER
for
• TOOL CRIBS • STOCK ROOMS • MACHINE SHOPS

Saves Time hunting through stacks of packaged drills. Compartments hold a gross of small sizes—a dozen or more of the larger ones. Raised letters on easy sliding drawers . . . hammerlin gray baked enamel finish . . . 14½"x7¼"x7¼".

Write for Circular
Model No. 1: Fractional drills 1/16" to 1/2"
Model No. 2: Number drills 1 to 60
Model No. 3: Letter drills A to Z

HUOT MFG. CO.
565 NORTH WHEELER STREET
ST. PAUL 4W, MINNESOTA
"HUOT is pronounced HEW-OT"

If you write maker identify as IEN - 13500

E&G COMPOUND BASE

6" lateral and 4" transverse continuous micrometer motion, with ZEROING dial reading direct to 1/10,000".

This versatile work table is standard equipment for precision machine work and inspection. Equipped with the microscope of your choice, the E & G Compound Base is instantly converted to a complete Toolmaker's Microscope!

Also available with our E & G Rotating Table for angular measurements.

For literature, write direct to manufacturer.

ERB & GRAY
854 South Figueroa St., Los Angeles 17, Calif.

If you write maker identify as IEN - 13501

If you write maker identify as IEN - 13502

YOU asked for these SPECIAL FEATURES in a Chemical Pump...

1 QUICK, EASY DISMANTLING without disturbing piping or driver.

2 ALL PARTS INTERCHANGEABLE except pump case and impeller. Four pump sizes fit one basic assembly.

3 CORROSION-RESISTANT CATCH BASIN is integral part of pump case—protects bearing bracket and base plate from corrosive leakage.

4 SIMPLE ADJUSTMENT to compensate for impeller wear.

+ PLUS MANY OTHER important design advantages . . . double-protected, grease-lubricated bearings . . . stuffingbox under suction pressure . . . and extra large shaft.

...Now BJ brings them to You!

Byron Jackson Co.
P. O. Box 2017, Terminal Annex, Los Angeles 54, Calif.
Offices in Principal Cities

Available in four sizes, capacities to 450 gpm, heads to 100 ft. Write for details.

If you write maker identify as IEN - 13503

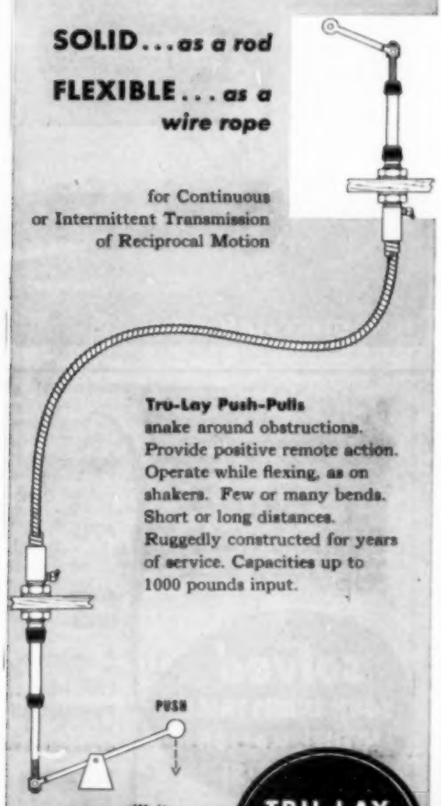
an ACCO product

TRU-LAY PUSH-PULL CONTROLS

SOLID . . . as a rod

FLEXIBLE . . . as a wire rope

for Continuous or Intermittent Transmission of Reciprocal Motion



Tru-Lay Push-Pulls snake around obstructions. Provide positive remote action. Operate while flexing, as on shakers. Few or many bends. Short or long distances. Ruggedly constructed for years of service. Capacities up to 1000 pounds input.

Write our Detroit office today for DH-287

TRU-LAY PUSH-PULL CONTROLS

ACCO

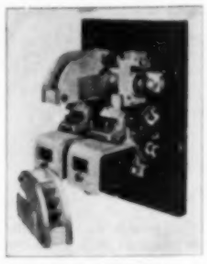
AUTOMOTIVE AND AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE

601 Stephenson Bldg., Detroit 2
2475 Porter St., Los Angeles 21 • Bridgeport, Conn.

If you write maker identify as IEN - 13505

SWITCH . . Heavy duty contactor, 150 to 600 amp. on 600-volt dc.

Source: ALLIS-CHALMERS MFG. CO.
909 S. 70th St., Milwaukee 14, Wis.



Bulletin 14B6505A

Two units are shown side by side, one of them partly disassembled, in the company's new Type-200 heavy duty dc. mill contactor. The new unit is available in normally open or normally closed design and is intended particularly for use on rolling mill controls, mill auxiliaries, cranes, hoists. The arc chute, shown removed from the unit to the right, can be lifted off to expose the contacts without removing screws or bolts. Each contact is held by a single screw for quick removal and replacement. The operating coil is supported by a single bolt. Oilite shaft bearings require no field lubrication. The silver alloy auxiliary contacts require no dressing.

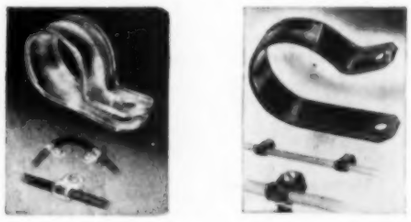
Initial circuit closing is made on the contact tips and is followed by rolling action for current carrying on the clean contact heels. Arc current impinges on the loop ends of segments in the arc chute and sets up magnetic fields which force the arc to move toward the centering zone. Blow out action is a result of both thermal convection and magnetic action.

The metal elements help cool the arc path while the arc speeds to its extention. The arc chute walls are made of asbestos cement to insulate the metal segments from each other. Arc centering action prevents carbonization. The new unit is available plain or with electrical auxiliary interlocks. Mechanical interlocks, consisting of horizontal phenolic bars pivoted at the center, are available for contact pairs.

If you write maker identify as IEN - 13506

CLAMPS . . Flexible plastic design to hold wiring, 1/8 to 1 1/4 in. sizes

Source: WECKESSER CO.
5259-63 N. Avondale Ave., Dept. 2, Chicago 30, Ill.



Technical data upon request

Etholoc, to the left in the illustration, and NyLoc, to the right, are two new clamps to install electric wiring. Both are made of insulating plastic materials and are available in light duty and heavy duty designs.

The plastic material for the Etholoc clamp is ethyl cellulose made by Dow Chemical Company under its trade name Ethocel. Nylon, made by DuPont in Type FM-10001, is the material employed in the NyLoc clamp.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13507

A PAID NEWS ADVERTISEMENT BY THE SCHATZ MANUFACTURING CO.

New Double Row Ball Bearing Rollers Replace Precision Bearings

Manufacturers who want to cut costs without sacrificing anti-friction efficiency will be interested in the new type KR and KRS ball bearing rollers made by the Schatz Manufacturing Co.

These bearings are designed to replace expensive precision bearings when extremely heavy loads and high speeds are not present. Their cost is often less than that of bushings or plain sleeve bearings—since costly machining and assembly time is eliminated. They can handle loads too heavy for single row bearings in space too small for two separate rows.

All parts are machined from solid bar stock—carburized, hardened and tempered. Balls are of highly polished, hardened steel. Modifications in the outer ring can be made for specific requirements.

Schatz offers you its catalog No. 11, which gives complete information on all "Commercial" ball bearings. Feel free to consult Schatz engineers on bearing problems.

THE SCHATZ MANUFACTURING COMPANY
6750 Fairview Avenue, Poughkeepsie, N. Y.

If you write maker identify as IEN - 13508

PORTELVATOR "S"
for extra low pick-ups and extra high lifts...

Safety of Operation

is inherent in the mechanical lift principle of this brawny tool, which transmits power through worm, worm gear, and screw.

Eliminates "ganging-up" on heavy lifts. Reduces occurrence of industrial accidents. Saves valuable production time.

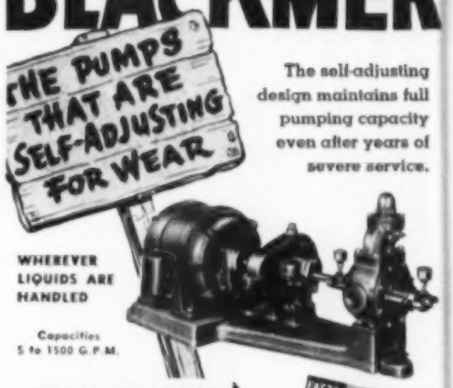
Get complete information now and be ready for the challenge ahead. Write for Bulletin P-506-S.

CAPACITY	1000 POUNDS
MAXIMUM PLATFORM HEIGHT	58"
MINIMUM PLATFORM HEIGHT	6"

The Hamilton TOOL COMPANY
905 HANOVER STREET • HAMILTON • OHIO • U. S. A.

If you write maker identify as IEN - 13509

BLACKMER



The self-adjusting design maintains full pumping capacity even after years of severe service.

WHEREVER LIQUIDS ARE HANDLED

Capacities 5 to 1500 G.P.M.

Get the "FACTS"

Blackmer Pumps
Blackmer Pump Company
Grand Rapids 9, Michigan

Write for a copy!

If you write maker identify as IEN - 13510

TAKE A TIP BUY A ZIP!

Whatever your handling problems include, chances are the Zip can save you time and money with fast, effective "thru-the-air" handling. It's a real wire rope electric hoist — with full magnetic push button control. Safer — more dependable — built for lifetime service. 2,000 lbs. capacity; with bolt, hook, or trolley mounting. It's America's finest small hoist.

SEND FOR YOUR FREE COPY

This fully illustrated 20-page bulletin will give you many cost-cutting ideas. Write for it today. Ask for NEW ZIP-LIFT Bulletin.

HARNISCHFEGER CORPORATION
4600 W. NATIONAL AVENUE • MILWAUKEE 46, WISCONSIN

If you write maker identify as IEN - 13511

ECONOMY-WISE?

BUY MOLDED PLASTICS BY

GRIGOLEIT

The best for less has been a habit with Grigoleit for over a quarter century. Economy, service and sales appeal combine to give your product a new look in molded plastics. A complete line is available for your selection. Prompt delivery assured, providing you order now.

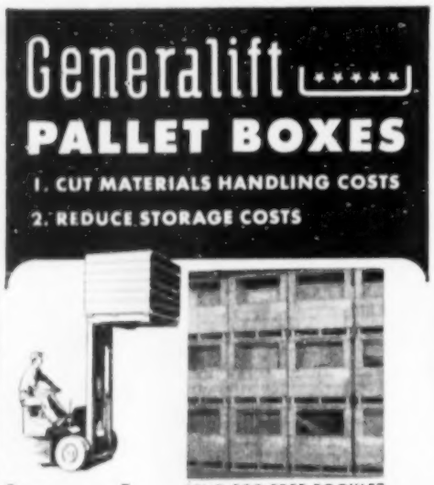
GRIGOLEIT is now in a position to accept orders for the manufacture of small knobs of plastic stamping for appliance trim.

THE GRIGOLEIT COMPANY

If you write maker identify as IEN - 13512

Generalift ★★★★★ PALLET BOXES

1. CUT MATERIALS HANDLING COSTS
2. REDUCE STORAGE COSTS



SEND FOR FREE BOOKLET

General ★★★★★ BOX COMPANY

GENERAL OFFICES: 1815 MINER STREET, DES PLAINES, ILL.

DISTRICT OFFICES AND PLANTS: Cincinnati, Danville, N. J., Detroit, East St. Louis, Kansas City, Louisville, General Box Company of Mississippi, Meridian, Miss., Milwaukee, Sheboygan, Winchendon. Continental Box Company, Inc., Houston, Dallas.

If you write maker identify as IEN - 13513

BE CERTAIN

GET BRONCO Certified

the portable cords and cables with 60% by weight Neoprene jackets.

BRANDED!

BRANDED JACKETS! No mistake... You know you are getting Certified. You read at a glance cable type, size, voltage, "P11ABM"... which indicates approval by the Pennsylvania Bureau of Mines, and acceptance for listing by the U. S. Bureau of Mines. Easy to measure . . . "Bronco" is repeated every 2 feet.

With Bronco 60 Certified you know you are getting a full 60% by weight of Neoprene in your cable's protecting jacket because its contents are certified.

More Neoprene makes long-lasting Bronco 60 Certified more resistant to oil, acids, alkalis, ozone, gasoline, salt water.

In addition, with Bronco 60 Certified you get: 1. Cold Rubber Insulation. 2. Branded Jackets. 3. Superior Flexibility.

So, BE CERTAIN, GET CERTIFIED — the greatest cord value on the market!

SOLD NATIONALLY BY ELECTRICAL WHOLESALE DISTRIBUTORS

WESTERN INSULATED WIRE CO.
Los Angeles 58, California

If you write maker identify as IEN - 13514

WHEEL . . Roller bearing design with spindle, for equipment makers

Source: FRENCH & HECHT DIVISION
46 East River St., Davenport, Iowa

Load rating is 750 pounds

A spindle made of 1¼-in. cold rolled steel is a **standard part** of this new wheel assembly. It is equipped with a **Rollway** double roller bearing and Chicago Rawhide seals. The wheel will take an 8.20 by 15 tire. Its rim and web are made of pressed steel in welded assembly. Bolt circle on the hub is 4¾ in. in diameter. Spindle length is 10 inches.

If you write maker identify as IEN - 13515

STATIC ELIMINATOR . . Treated cloth removes surface static by wiping

Source: GLOBE LABORATORIES
P. O. Box 892-A, Sherman Oaks, Calif.

List is $24 per dozen

De-Stat trade names a new cloth that has been impregnated with a chemical compound. The cloth measures 18 by 18 inches. It also is available in a 36-in. width for use on a roller where material is handled in a continuous process and must be kept free from static charge.

The cloth can be used indefinitely if it is kept free from dirt. Materials that have been wiped can then be washed with soap without losing their anti-static qualities. The cloth is non-toxic and will not harm human skin. Packaging is one dozen to a box.

If you write maker identify as IEN - 13516

VISE . . Screw operated design, ball mounted, for a bench or machine

Source: BELLOWS MFG. CO.
1015-19 N. Central Expressway, Dept. 1, Dallas, Texas

Vise, base plate and wrench about $40

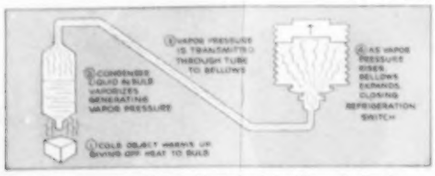
A ball, integral with the stationary jaw on this new Third Hand vise, provides for universal positioning in connection with a base plate and clamping plate. The vise jaws measure 3 in. in width and open to 3 inches. Distance from the bottom of the base plate to the top of the jaws is 9⅛ inches. The vise and its base can be employed on a bench or a machine table in connection with clamps or sub-bases as illustrated.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN - 13517

A PAID NEWS ADVERTISEMENT BY CLIFFORD MFG. CO.

VAPOR PRESSURE bellows system for temperature control and indication.



Control system used in refrigeration has wide application in other industries with temperature control problems

For close temperature control, Westinghouse and other leading refrigerator manufacturers depend upon the positive-acting components of the Clifford vapor-pressure bellows system. This can be designed to be a "fail-safe" device to prevent overheating even if bellows itself fails. Systems available with bulb at highest or lowest temperature point or where bulb will operate at temperatures higher or lower than the rest of the system. Adjustment is generally obtained by spring loading against bellows pressure. Only short bellows travel is required.

Other common applications of Clifford's vapor pressure bellows systems are temperature regulators for water heating and cooling tanks, steam cookers, acid baths, tempering baths, glue heaters, etc. Clifford is glad to answer your specific questions and provide "bellows-engineering" help.

Write for bulletin: "What To Consider When Selecting Metallic Bellows."

CLIFFORD MANUFACTURING COMPANY
146 Grove Street, Waltham 54, Mass.
Division of Standard-Thomson Corporation

If you write maker identify as IEN - 13518

PLASGON

SEALS leaky pipe joints

Plasgon is an all-purpose plastic cement that not only seals pipe joints, radiator connections, etc. but stays flexible, absorbs jars and shocks. Unaffected by steam, water, oil, gasoline, glycol . . . resists heat up to 350° F. and withstands considerable pressure.

Keep a tube of *Plasgon* in every mechanic's tool kit and in the shop. Comes in black or white.

Write for Large Free Sample Tube of Plasgon to try on the job.

SAMUEL CABOT INC.
1283 Oliver Bldg., Boston, Mass.

If you write maker identify as IEN - 13519

Sheehan's HEAVY-DUTY TWO-PLANE FORGING CONVEYORS are Better!

SOLVES MANY FORGE PROBLEMS CONVEYING

Write today for literature on sizes, special applications and cost data. You will be surprised at Sheehan's high quality and low prices.

Companion to the nationally-known Sheehan Press Conveyors. This Model B Forging Conveyor is equipped with a special high carbon Steel Woven-Mesh Belt capable of conveying hot or cold forgings weighing up to 25 pounds with ease. Top of belt can be lowered down within 11 inches of floor to fit under hot or cold trim presses or in front of drop hammers and upsetters . . . saving working space and need for cumbersome chutes. Positive drive spike-studded pulley on head-end assures no belt slippage due to heat expansion while conveying hot forgings. Double strength construction throughout to withstand continuous heavy loads and excessive heat. Open bottom for cooling forgings.

The Two-Plane Model B or the Straight Model S are available in various sizes. Investigate the many construction and safety features that make Sheehan Forge and Press Conveyors outstanding in performance and economy!

SHEEHAN'S FORGING CONVEYORS ARE DIFFERENT . .

Investigate Today!

R. T. SHEEHAN CO. PLYMOUTH, MICH.

If you write maker identify as IEN - 13520

INCREASE PRODUCTION...eliminate errors...prevent costly accidents ...*in your industrial operations.* Westline pressure-sensitive labels are easy to 'a-ply-dry'... and they stick-and-stay-stuck through heat, cold and humidity. Westline pressure-sensitive markers provide over 12 different solutions to your industrial identification

WIRE
PIPES
FLOW LINES
PARTS-IN-PRODUCTION
INSPECTION
INSTRUCTION
QUICKLY IDENTIFIED
!

solved YOUR INDUSTRIAL IDENTIFICATION PROBLEMS!

problems. They can be supplied from stock or to your exact specifications in size and marking information.
Get the facts on this amazing modern method of industrial marking today!

WESTLINE *Products*
Division of Western Lithograph Company
600 East Second Street, Los Angeles 54, California
Box 3804, St. Louis 22, Missouri
Write for Folder—Dept. IEN-12

If you write maker identify as IEN - 13521

FREE...

BULLETIN 161

2 BULLETINS on SHORT RUN STAMPINGS

BULLETIN 101

FOR... DESIGNERS, METHODS ENGINEERS, PROCESS ENGINEERS, PRODUCT ENGINEERS, MECHANICAL ENGINEERS, RESEARCH ENGINEERS, SUPERINTENDENTS, PURCHASING AGENTS

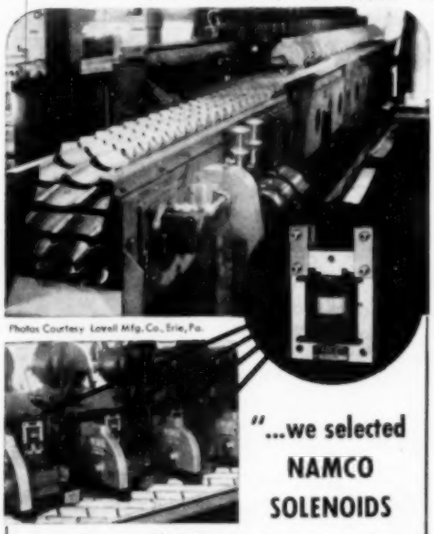
SEND FOR THESE HELPFUL BULLETINS TODAY

SERVICES BULLETIN NO. 161 describes the facilities that make Federal a *one-stop* stamping service. Specifications cover special die stamped wrenches, nameplates, and quality short run stampings from any stampable material.

COSTS BULLETIN NO. 101 shows how Federal's special dies give the accuracy, exact duplication, and tolerances of permanent dies *plus* saving as much as 80% on die costs.

Federal TOOL AND MANUFACTURING CO.
3612 ALABAMA AVE. ST. LOUIS PARK
MINNEAPOLIS, MINNESOTA
"QUALITY STAMPINGS IN SMALL QUANTITIES"

If you write maker identify as IEN - 13522



Photos Courtesy Lovell Mfg. Co., Erie, Pa.

"...we selected NAMCO SOLENOIDS because all 19 must operate in EXACT SYNCHRONIZATION on this precision cutting operation"

The nineteen pairs of knives in this special machine cut off eighteen identical lengths of rubber rolls for washing machines. F. J. Fink & Co. designed them to operate at exactly the same instant. In their own words, "Proper functioning of the machine depends very largely on the reliability of the solenoids that actuate the knives." Naturally, Namco was their choice.

Additional reasons why they selected Namco "Stellite"-Welded Solenoids to do this job, are, to quote them further:"—mounting costs are considerably less than with other solenoids", and, "—their design lends them especially well to integration in a functional machine design."

Wherever you need a push or a pull of up to 25 pounds, it will pay you to investigate Namco Solenoids. They're simple; they're compact—*and they're reliable. We engineer them to your specific requirement.* May we recommend the size, style and method of application best suited to your needs?

Namco "Stellite"-Welded Solenoids are built in a variety of sizes and mountings, both push and pull types, for either AC or DC service, to meet every industrial application. The complete standard range is illustrated and tabulated in Engineering Bulletin EM-52. Ask for your copy.

ELECTRICAL MANUFACTURING DIVISION
178 East 131st Street • Cleveland 8, Ohio

NATIONAL ACME
CLEVELAND, OHIO

If you write maker identify as IEN - 13524

VALVE . . Solenoid operated provides adjustable closing interval

Source: ATKOMATIC VALVE CO.
543-47 W. Abbott St., Indianapolis 7, Ind.

Pressure to 3,000 pounds

Pressure enters from the left hand side of this new design in company's solenoid valve, previously described IEN-4020-39. It acts upward under the piston built integral with the valve plunger and tends to open the flow port. This is prevented as long as the solenoid operated needle valve pin rests on the small central port leading through the center of the plunger. This pin closes off escape of pressure that reaches the space above the plunger through a port in the plunger head communicating with the angular chamber.

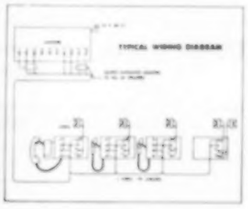
Closing the solenoid circuit lifts the pin, opens the central port, permits escape of the pressure so the plunger lifts and the valve is open. Opening the solenoid circuit permits the pin to return and close the central port. Then the plunger returns to "down" position at a speed determined by the adjustable setting of the head port. The closing interval is maximum at 30 seconds. The new construction is available on valves in the line for pressure to 300 pounds.

Valve sizes range from ¼ to 3 in. with overall height at 7 to 14 inches. Weight is about 4 to 56 pounds. The company has prepared a series of bulletins dealing with individual applications to handle hydraulic pressure, steam, air, gas. These bulletins are available upon request.

If you write maker identify as IEN - 13525

COMMUNICATING . . Telephone connects plant departments and office

Source: FARMERS ENGINEERING & MFG. CO.
547-51 Brushton Ave., Pittsburgh 21, Pa.



Illustrated details in Bulletin 26

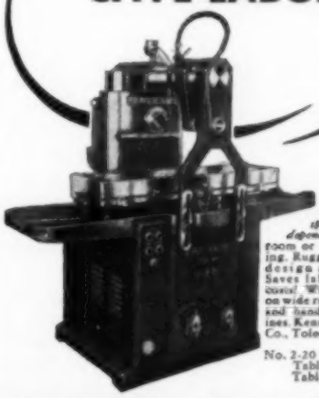
An office or main control station connects to a required number of remote stations. All hear simultaneously any talk impressed on the microphone at any one of the stations in this new Audiophone equipment. It has been developed to supplement the electronic telephone equipment that transmits over plant power lines, previously described IEN-8510-52. Key individuals at widely separated points can all be brought within voice contact with each other.

The equipment is available in various designs of microphone, loudspeaker, central cabinet. Special circuits can be designed and installed for private two-way conversation. Operation is on 110-volt 60-cycle ac.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 89

If you write maker identify as IEN - 13526

MILL IT *faster..* SAVE LABOR!



Kent-Owens advanced features mean *speed, accuracy and dependability*... in tool room or production milling. Rugged ... simple in design and operation. Saves labor ... reduces costs. Write for bulletins on wide range of hydraulic and hand-operated machines. Kent-Owens Machine Co., Toledo, Ohio.

No. 2-20 Milling Machine
Table, 42" x 12"
Table travel, 20"

KENT-OWENS
Milling Machines

If you write maker identify as IEN - 13527

Internal Grinder

SOUTH BEND Lathe Attachments

- *Increase Lathe Versatility*
- *Simplify Difficult Jobs*

Turret Tool Block — Handlever Bed Turret — Milling Attachment

Taper Attachment — Step Chuck — Handlever Cross Slide

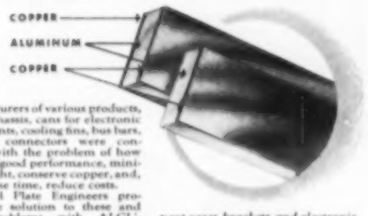
10-in-1 Tool Holder — Handlever Collet — External Grinder

WRITE FOR CATALOG 5102 **SOUTH BEND LATHE**
Building Better Tools Since 1906 • SOUTH BEND, INDIANA

If you write maker identify as IEN - 13528

PROBLEM:
To obtain high electrical conductivity, excellent heat dissipation, soft soldering surfaces, light weight and reduced costs

SOLUTION:
General Plate provided the solution with ALCUPLATE® (copper-clad aluminum) . . . a composite metal



Manufacturers of various products, such as chassis, cans for electronic components, cooling fins, bus bars, terminal connectors were confronted with the problem of how to obtain good performance, minimize weight, conserve copper, and, at the same time, reduce costs.

General Plate Engineers provided the solution to these and other problems with ALCUPLATE (copper-clad aluminum).

Made by permanently bonding a thin layer of critical copper to thicker, more readily available aluminum. ALCUPLATE has practically the same physical and electrical properties as copper plus the light weight of aluminum.

ALCUPLATE can be fabricated by stamping, drawing or forming. Its malleability permits its use in the manufacture of many parts from work hardened rather than annealed or dead soft materials. The copper provides an ideal surface for soft soldering or electroplating.

ALCUPLATE is widely used in the electrical and electronic fields for terminals, clips, shims, small motor housings, electronic component cases, brackets, and electronic wave guide tubing. It may also be used for heat transfer assemblies, fin and tube type radiators, printed circuits, costume jewelry and similar applications.

General Plate products include ... precious metals clad to base metals, base metals clad to base metals, silver solders, electrical contacts, buttons and rivets, TRU-FLEX® thermostat metals, ALCUPLATE®, platinum fabrication and refining, #720 manganese age-hardenable alloy. Write for information.

METALS & CONTROLS CORPORATION
GENERAL PLATE DIVISION
712 Forest Street, Attleboro, Mass.

If you write maker identify as IEN - 13529

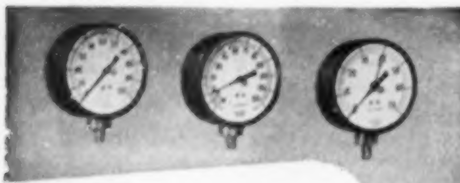
25-TON Industrial handyman

Koehring 304 Cruiser Crane combines 25-ton lift capacity with rubber-tired mobility . . . has shuttle speed of 4.8 m.p.h. One man controls both travel and crane operation from cab. Standard 30 ft. boom extends to maximum 110 ft. with jib . . . has power boom lowering. Other Koehring sizes: 7½ to 79½ tons. For more complete information, write

KOEHRING Company
Milwaukee 16, Wis.

KOEHRING Cranes

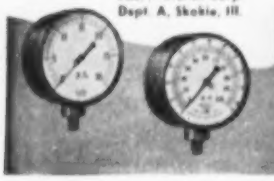
If you write maker identify as IEN - 13530



1001 GAUGES to choose from

The combinations of styles, types, mountings, ranges and functions of Marsh Gauges are almost endless; but they all have one trait in common: Each is best for the service for which it is recommended. Write today for the new Marsh Catalog covering the broad Marsh line. Let us prove that Marsh is the gauge for your product, whether you need a few or thousands.

Marsh Instrument Co. Sales affiliate of
Jas. P. Marsh Corp.
Dept. A, Skokie, Ill.



MARSH

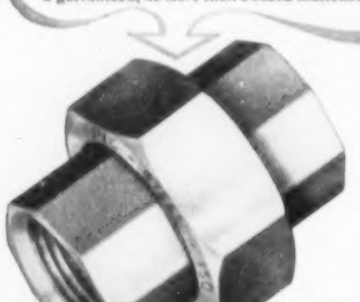
If you write maker identify as IEN - 13531

PIC of the Pack!

New Equipment Favorites — 100% Zinc Plated

PIC STEEL UNIONS*

Just the union for makers of original equipment, Pics are bright, good looking . . . and speed assembly and installation of your machines. Open end wrenches can be used because ends are uniformly flat-sided, uniformly parallel. Ends are strong, too — of heavy steel pipe coupling stock. Special wedge type bronze seat assures tightness. Zinc plating (even on threads) for maximum rust protection. And the best news is Pics cost *less* than a galvanized, *no more* than a black malleable union!



*For 150# Service...
Write for FREE SAMPLES

DART UNION COMPANY
130 THURBERS AVENUE, PROVIDENCE 5, R. I.

If you write maker identify as IEN - 13532

TEMPILSTIKS°

the amazing Crayons that tell temperatures

in
WELDING
FLAME-CUTTING
TEMPERING
FORGING
CASTING
MOLDING
DRAWING
STRAIGHTENING
HEAT-TREATING
IN GENERAL

it's this simple:
• Select the Tempilstik° for your working temperature.
• Mark your workpiece with it.
• The Tempilstik° will leave a liquid mark as soon as its specified temperature is reached.

Available in these temperatures (°F)

113	212	313	450	850	1250	1650
125	225	325	500	900	1300	1700
138	238	338	550	950	1350	1750
150	250	350	600	1000	1400	1800
163	263	363	650	1050	1450	1850
175	275	375	700	1100	1500	1900
188	288	388	750	1150	1550	1950
200	300	400	800	1200	1600	2000

Also available in pellet and liquid form.

$2 each

gives up to 2000 readings

TEMPIL CORPORATION
11 West 25th St., New York 10, N. Y.

FREE—Tempil° "Basic Guide to Ferrous Metallurgy" —16¼" by 21" plastic-laminated wall chart in color. Send for sample pellets, stating temperature of interest to you.

NAME ____
COMPANY ____
ADDRESS ____

If you write maker identify as IEN - 13533

CONNECTOR . . Solderless terminal prevents shorting on control panel

**Source: AIRCRAFT-MARINE PRODUCTS INC.
2102 Paxton St., Harrisburg, Pa.**

Reinforced Ampli-Bond

Insulated ring, made of metal, is employed near the base of the insulation supporting sleeve in this new Ampli-Bond terminal. The ring provides strength to resist vibration and sharp bending. It does not communicate with the electrical connection further up the barrel. The unit can be installed with one stroke of the company's crimping tool. It is available in 12-10 and 16-14 HD sizes. It is color coded for identification. The outer plastic covering of the pre-insulated assembly can be pierced without causing a short.

If you write maker identify as IEN - 13534

SOLDERING . . Tin-lead material contains rosin flux in ⅜ in. ribbon

**Source: BLONDE OIL CO.
462-66 Woodward Ave., Brooklyn 27, N. Y.**

2½ ft. piece costs 25 cents

A short piece of the company's new Tape solder can be cut or torn, from the ⅜-in. ribbon in which it is supplied, and positioned between two parts to be soldered together. Application of heat from any suitable source melts the solder and completes the joint. No special equipment is required. The solder is standard 40/60 tin-lead material.

If you write maker identify as IEN - 13535

TRUCK . . Load clamp attachment to handle light weight packages

**Source: YALE & TOWNE MFG. CO.
11002 Roosevelt Blvd., Philadelphia 15, Pa.**

Removable design

The company announces development of a new hydraulically operated clamp attachment for application on its 1 ton electric fork lift truck. The attachment closes in from the two sides to grip, lift and carry light weight packages in storage areas, docks and in highway trailers. It will open to a spread of 60 inches. It will lift to 130 in. above the floor line for stacking operation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . *See Page 58*

If you write maker identify as IEN - 13536

A PAID NEWS ADVERTISEMENT BY REMINGTON RAND INC.

PRODUCTION CONTROL, 1952 . . . '53 — by men who have controlled production

This new booklet by Remington Rand offers you, *free*, first-hand experience in case-history form, by production men who are dealing successfully with today's complex manufacturing problems.

They find, as you have found, that to deliver the goods today sure-fire methods must be found to coordinate men, materials, machines. The simpler these methods, the better.

Whether your plant is large or small, you will want this book right at your elbow. There's not an ounce of theory in it — it's packed with down-to-earth know-how in your own language. For your free copy of X1268, write direct to the publisher, Remington Rand Inc., or use the Reader Service Form.

REMINGTON RAND INC.
Management Controls Library, Room 1558
315 FOURTH AVENUE, NEW YORK 10, N. Y.

If you write maker identify as IEN - 13537

Wherever temperature and humidity control is a factor

SPECIFY Remington Climate Controllers

Laboratories, testing rooms, food and pharmaceutical packing plants are just a few of the problem spots where temperature and humidity control problems are being solved every day by Remington Climate Controllers.

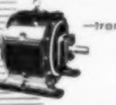
The Climate Controller combines cooling, heating (optional), dehumidifying, filtering, circulating and ventilating in one compact unit. It is recommended for temperatures from 50° to 95° F., relative humidities from 20% to 85%. Depending on conditions, a single unit can handle up to 6,000 cu. ft.—three units, up to 24,000 cu. ft.

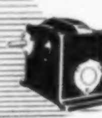
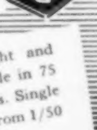
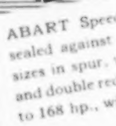
Automatic controls are available. Air cooled models require no plumbing—only outside air connections and electrical supply. There are water cooled models, too. Get the facts on the Remington Climate Controller today. Write for Bulletin 103.

Where excess humidity is the major problem Remington "Moisture Magnet" Dehumidifiers will remove up to 266* pints of water daily. *(Test conditions)

Remington AIR CONDITIONING
61-1 Willey Street
Auburn, New York

If you write maker identify as IEN - 13538



Abart SPEED REDUCERS

CUT COSTS because they're

EFFICIENT
—transmit power smoothly and economically

DURABLE
—long service-life expectancy

COMPACT
—conserve space

SELF-LUBRICATING
—less maintenance

ABART Speed Reducers are oil-tight and sealed against dust. They are available in 75 sizes in spur, worm, and combinations. Single and double reduction units are rated from 1/50 to 168 hp., with ratios up to 10,000 to 1.

Write today for your free pocket-size catalog containing full information on Abart Speed Reducers and Gearmotors.

Abart GEAR & MACHINE CO.
4823 WEST 16th STREET • CHICAGO 50, ILLINOIS
Mfrs. of Gears, Speed Reducers and Gearmotors

If you write maker identify as IEN - 13539

WAR & INDUSTRIAL NEW • USED **SURPLUS BARGAINS** SAVE UP TO 85% 1001 ITEMS

HYDRAULIC TRANSMISSION
Easily adapted for use with lathes, mill duplicators for set-ups, conveyors, drives, gearing, etc. Self-contained unit: 2 H.P., constant torque at all speeds. Includes variable volume reversible piston pump, to operate piston type hydraulic motor. Power output in R.P.M.: 0 to ½ input R.P.M. in either direction. Input R.P.M.: 1800 cont.; 4000 R.P.M. intermittent automatic pressure; dash pot for smooth control, also self contained reservoir. Removed from new equipment. $45.00

HYDRAULIC MASTER & SLAVE UNITS
Exactor Controls ... this combination unit eliminates complicated rod linkage for throttle controls on machinery, auxiliary power units, gasoline engines, etc. These units when connected with ¼" tubing and filled with oil provides a precision 1:1 ratio; 90° throw control. Combination Master & Slave $34.50

SYNCHRONOUS SELSYNS
110 Volt, 60 Cycle. Brass Cased, approximately 4" diameter x 6" length. Mfg. by Diehl and Bendix. Quantities available.
REPEATERS $20.00
TRANSMITTERS $20.00

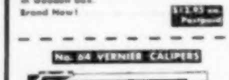
POWER RHEOSTATS
Standard brands: 5 Ohms: 100 watt: 4.40 amps. 100 Ohms: 100 watt: 1.0 amp.
BOXED BRAND NEW with Knob $2.50 ea.
1 Dozen $25.00

ALL EQUIPMENT FULLY GUARANTEED

HELIOS IMPORTED GERMAN PRECISION TOOLS

No. 213-A MICROMETER 1/10,000"...0-1"
Ratchet stop and locking ring. Threads ground and lapped. Polished Bow ... Comes in wooden box.
Brand New! $12.95 ea. Postpaid

No. 64 VERNIER CALIPERS

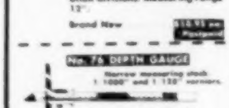


For inside and outside measurements. 1/1000" & 1/128" verniers. Measuring range 0". Engraved graduation divisions. Measuring range 12".
Brand New $9.95 ea. Postpaid

No. 65 VERNIER CALIPERS

For inside and outside measurements. With points. 1/1000" and 1/128" verniers. Measuring range 8 inches. Engraved graduation divisions. Measuring range 12".
Brand New $15.95 ea. Postpaid

No. 76 DEPTH GAUGE



Narrow measuring stock. 1/1000" and 1/128" verniers.
Measuring range 0"; length of jaws 1½".
Measuring range 12"; length of jaws 3½".
Measuring range 6"; length of jaws 4". Brand New [illegible] Postpaid

PRICES F.O.B. PASADENA UNLESS OTHERWISE QUOTED • PLEASE ENCLOSE FULL AMOUNT WITH ORDER

C & H SALES COMPANY
BOX 356-OE EAST PASADENA STATION • PASADENA 8, CALIFORNIA

If you write maker identify as IEN - 13540

Here are a few good reasons why Ex-Cell-O Drill Jig Bushings last longer and perform better:

1. Premium grade tool steel is selected for wear resistance and heat treated to 62-64 Rockwell "C".
2. Every bushing must measure up to Ex-Cell-O precision standards, as well as to A.S.A. standards.
3. High finish is ground on inside and outside diameters, and under the head for perfect bearing.

To satisfy the needs of your purchasing and engineering departments ask for an adequate supply of Ex-Cell-O Bushing Catalogs.

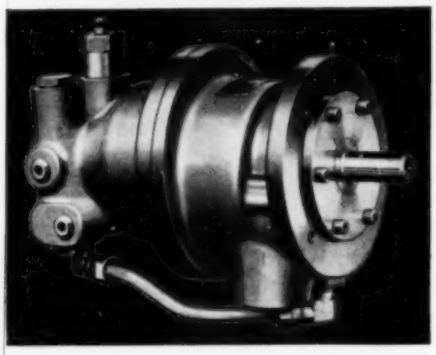
EX-CELL-O CORPORATION
DETROIT 32, MICHIGAN

MANUFACTURERS OF PRECISION MACHINE TOOLS • CUTTING TOOLS • RAILROAD PINS AND BUSHINGS • DRILL JIG BUSHINGS • AIRCRAFT AND MISCELLANEOUS PRODUCTION PARTS • DAIRY EQUIPMENT

51-54

If you write maker identify as IEN - 13541

New Oilgear Constant Delivery Axial Piston Pumps (Generators)



New... yet records show these are the RIGHT pumps for continuous heavy-duty service

The Oilgear Company announces three new constant delivery axial piston pumps for pressures up to 3000 and 5000 psi, speeds up to 1800 r.p.m. These compact units feature patented balanced flat valves, patented simple one-piece rolling pistons, patented quiet reverse flow high pressure and supercharging relief valves and 100% supercharge volume. Oilgear's exclusive flat valves provide high volumetric efficiency and assure an adequate oil film on working surfaces; their *RIGHT* design for exceptional durability has been proven on over 100,000 installations. For years, several million of Oilgear's exclusive rolling pistons have demonstrated they are the *RIGHT* design for heavy-duty service. These units are *RIGHT* for heavy-duty pushing, pulling, lifting, lowering, maintaining high static loads as on clamping cylinders, for service in iron, steel, metal working, plastic, automotive, rubber, printing, lumber and textile industries. These pumps are:

RIGHT—for your heavy-duty applications.
RIGHT—for your high static load requirements.
RIGHT—for your precise hold-down jobs.
RIGHT—for long, trouble-free service.
RIGHT—for quiet operation under varying loads.

Write for Illustrated Bulletin 46601

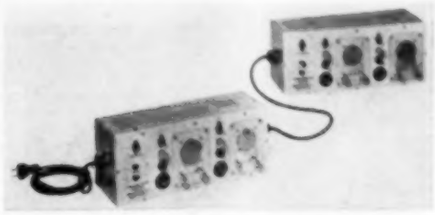
THE OILGEAR CO., 1567 W. Pierce St., Milwaukee 4, Wis.

OILGEAR *Fluid Power*
Pumps, Motors, Transmissions
THE RIGHT EQUIPMENT

If you write maker identify as IEN - 13543

TIMING . . Multiple interval unit, interchangeable plug-in mechanisms

Source: RICHARD F. BECKER CO.
3018-22 N. Cicero Ave., Dept. IEN, Chicago 41, Ill.



Operating instructions are printed on the housing

Illustrated is a double assembly of the new Model VSC Add-A-Cycle interval time to show how more than one of the basic assemblies can be connected together for multiple event process control. Each basic unit mounts two interchangeable self-contained plug-in motor driven timing mechanisms that can be set, each within its own range, to control its portion of the process cycle. There are six of these mechanisms with overlapping ranges from 1.5 seconds to 2 hours.

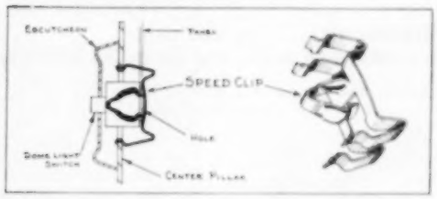
The mechanisms plug into rectangular openings in the main housing. On the left hand side of each is a circuit switch that can make that particular one inoperative without affecting the others, a pilot light to show whether the mechanism is on or off and a protecting fuse. Housing dimensions are 3¾ by 5 by 5½ inches.

Circuit rating is 10 amp. on 110-volt 60-cycle ac. Input is from a 110-volt 60-cycle ac. line. Equipment includes a 6-ft. input cord and intercommunicating cables.

If you write maker identify as IEN - 13544

FASTENING . . Spring steel clip assembles light switch on steel panel

Source: TINNERMAN PRODUCTS INC.
Box 6688-A, Dept. 14, Cleveland 1, Ohio



Designed and manufactured to order

No. C20655-017 is a new spring steel clip in the company's line of special fastenings by which a dome light switch is assembled on the center pillar of an automotive panel with access to only one side. The central portion of the clip is snapped into place in a hole measuring 0.187 in. in diameter in the switch housing. The switch and the clip are then positioned against the center pillar of the panel and the clip is pushed into place until its four spring ends snap into and hold in the pillar opening. Fastening points are hidden.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13545

A complete steam plant backed by undivided responsibility • Shipped completely assembled • More than 80% thermal efficiency guaranteed • 4-pass design provides 5 sq. ft. of heating surface per b.h.p. • Built-in induced draft eliminates need of expensive chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long-lived dependability

Superior Steam Generators are manufactured in 18 sizes from 20 to 600 b.h.p., for pressures up to 250 p.s.i. or for hot water heating.

For complete details, write for Catalog 417

SUPERIOR COMBUSTION INDUSTRIES, Inc.
Factory: Emsworth, Pa.
Exec. Offices: Times Bldg, Times Sq., New York N. Y.

If you write maker identify as IEN - 13546

THE SHORTEST DISTANCE BETWEEN ECONOMY and EFFICIENCY...

"Buffalo"
straight-line AXIAL FLOW FANS

Mount this "Buffalo" Axial Flow Fan right in your straight ductwork. You'll save the space of a floor unit mounted outside the duct system. For ventilation, exhaust or air-conditioning supply, "Buffalo" Axial Flow Fans offer light weight, compact design, straight line air delivery and non-overloading features. Find out how you can get better air handling at greater savings. Write for Bulletin AB33-C today!

BUFFALO FORGE COMPANY
496 BROADWAY • BUFFALO, NEW YORK
Publishers of "FAN ENGINEERING" HANDBOOK
Canadian Blower & Forge Co. Ltd., Kitchener, Ontario
Sales Representatives in all principal cities

"Buffalo" **AXIAL FLOW FANS**
"Air travels the Bee-Line Route"

If you write maker identify as IEN - 13547

Only P&H Welders have this feature

for faster, easier, sounder welds on non-ferrous and "hard-to-weld" metals

No other welder has this Instantaneous Control feature. It lets you handle "hard-to-weld" metals with ease—aluminum, magnesium, brass, copper, stainless, high alloy, high and low carbon steels. Check these features:

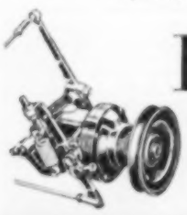
- **P&H Dial-betic Control** — No moving coils or cores to bind or freeze. Maintenance is absolutely negligible.
- **Built-in high frequency unit** — eliminates additional external equipment. Variable frequency control.
- **Automatic gas and water control** — Pre-set automatic time delay control (2 seconds to 2 minutes) prevents electrode contamination, assures clean, sound welds.
- **Stepless amperage regulation** — from 10 amps to maximum. Three models available — ranges 200, 300 and 500 amps.
- **Unusual arc stability** — Makes good clean welds when extremely low amperages are required.
- **Selector switch** — gives operator instant choice of standard or high frequency unit.

No wonder P&H AC Welders are the choice of the aircraft industries where top quality work and speed are "musts". They join "hard-to-weld" metals faster and easier — eliminate repeats for you, too. Get full details from your P&H representative or write us for further information.

P&H WELDING DIVISION
HARNISCHFEGER CORPORATION
4510 W. NATIONAL AVENUE
MILWAUKEE 14, WISCONSIN

Power Shovels • Crawler and Truck Cranes • Overhead Cranes • Hoists • Arc Welders and Electrodes • Self Stabilizers • Diesel Engines • Pre-Fabricated Homes

If you write maker identify as IEN - 13548



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ONE GOVERNOR ONE MODEL...

for 9 out of 10 industrial and farm engines

PIERCE LONG RANGE UNIVERSAL GOVERNOR

- Instant variable speed selection and accurate engine control at any speed setting within 1200 to 2600 RPM. Higher and lower ranges obtainable by simple change of pulley. Also "constant speed" operation.
- Accurate, dependable speed control for engines operating corn shellers, drag lines, hoists, arc welders, trucks and tractors with power take-offs, etc.

List Price **$39.50**
Pulley Extra 4" $1.70 5" $1.75

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1640 Ohio Avenue, Box 1000, Anderson, Indiana, U. S. A.

WORLD'S MOST EXPERIENCED GOVERNOR MANUFACTURER

If you write make identify as IEN - 13549

TYPE 67
With handwheel adjusting screw.

TYPE 67 FR
Combination filter regulator.

Nationwide Swing to

FISHER SERIES 67
SMALL VOLUME REGULATORS

AN ALL-PURPOSE REGULATOR PARTICULARLY ADAPTED AS AN AUXILIARY OPERATING MEDIUM PRESSURE REGULATOR

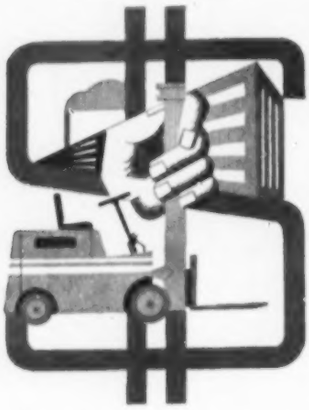
- ACCURATE, EFFICIENT REGULATION
- TIGHT CLOSURE • WILL NOT CHATTER, VIBRATE OR SING • NEAT DESIGN

CAPACITY UP TO 6 C.F.M.
WRITE FOR FISHER BULLETIN 67

FISHER GOVERNOR COMPANY
Marshalltown, Iowa

FISHER
LEADS THE INDUSTRY IN RESEARCH FOR BETTER PRESSURE CONTROL

If you write make identify as IEN - 13550



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CHOOSE CLARK

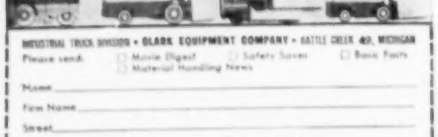
Solely on the basis of benefit to your business take a thoughtful look at the Five Factors of Profit built into Clark machines:

1. **TIME PROFIT**—Materials move faster, and in synchronized flow. Man-hours for loading and unloading are reduced drastically.
2. **SPACE PROFIT**—Idle space becomes profitable storage capacity.
3. **TURN-OVER PROFIT**—Speeding up the production cycle improves the inventory picture, conserves working capital.
4. **MANPOWER PROFIT**—Human productivity is sharply increased to offset shrinking manpower. Workers prefer the better jobs.
5. **SERVICE PROFIT**—Prompt, efficient service, provided by Clark's nationwide organization. Keeps equipment working.

Any way you look at it, your Clark investment gets you a solid, profitable "most for your money."

There's a most profitable time to look into it—RIGHT NOW! All the literature here are designed for your profit. Please use the coupon to order them.

CLARK ELECTRIC AND GAS POWERED FORK TRUCKS
AND POWERED HAND TRUCKS • INDUSTRIAL TOWING TRACTORS



INDUSTRIAL TRUCK DIVISION • CLARK EQUIPMENT COMPANY • BATTLE CREEK 49, MICHIGAN
Please send: ☐ Movie Digest ☐ Safety Saves ☐ Basic Facts ☐ Material Handling News
Name
Firm Name
Street
City Zone State

If you write make identify as IEN - 13552

CONVEYING . . Portable belt assembly handles work or scrap from machines

Source: SAGE EQUIPMENT CO.
28-32 Essex St., Buffalo 13, N. Y.

Special units to order

Three lengths are 6, 11 and 16 ft. and three widths are 6, 12 and 18 in. in this new Pressparts motor driven belt conveyor. The belt can be supplied plain or equipped with angle iron cleats. It is made of rubber, cotton, stitched canvas or wire mesh. Drive is by a geared head motor for operation on 110 or 220-volt ac. Assembly is on structural supports that can be supplied to fit a given installation and specified incline with provision for adjustment on the job. The conveyor will handle stampings or scrap from presses or work pieces between machines.

If you write make identify as IEN - 13553

DRAFTING . . Color pencil has lead that bends without breaking

Source: KOH-I-NOOR PENCIL CO.
10 Railroad Ave., Bloomsbury, N. J.

Available in 24 colors

Flexicolor No. 1800 is a new color lead pencil employing a plastic binder that imparts pliable strength without affecting its marking qualities. The lead will stand up under pressure like a firm graphite lead. At the same time it will deposit color like a soft crayon. The pencil can be sharpened easily. It is available in hexagon shape in 24 colors with a multi-colored end tip and pencil polished to match the color of the lead.

If you write make identify as IEN - 13554

HANDLING . . Strip coil grab designed to lift and carry horizontally

Source: EASTERN BRASS & COPPER CO.
1120-24 E. 180th St., New York 60, N. Y.

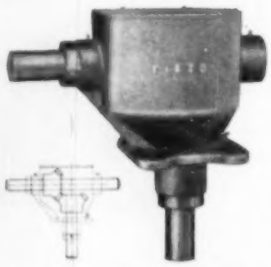
Load rating is to 750 lb. for this Type-104C unit in the company's Shur-Grab line of work handling equipment. It weighs 52 lb. and is adjustable for coils requiring grip span of 1 to 12 inches. It will pick up a coil and carry it in horizontal position for deposit at a new location. Lifting action on the toggle arm provides the required grip. The line includes nine types to handle cases, wood and metal barrels, coils and reels, crates, rods, tube, pipe, in various load capacities to 5,000 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 88

If you write make identify as IEN - 13555

A PAID NEWS ADVERTISEMENT BY PIEZO MANUFACTURING CORP.

MITRE GEAR BOX—Installs Easily in Any Position



Ruggedly constructed, the Piezo Mitre Gear Box is made with a solid mounting base to simplify installation, and it may be installed in any position.

Precision mitre gears assure dependable operation for medium speed power drives or hand operation with a 1:1 ratio. The gears meet power and torque rating for each respective shaft diameter in conformance with AGMA standards. They are furnished with bronze or roller bearings, as required.

The hydraulic type grease fittings provide positive lubrication of the bearings. Oil seals prevent leakage thereby maintaining proper oil level for lubrication of gears. Steel shafts are firmly keyed to the gears. Six sizes are available with ½" to 1¾" shaft diameters.

Used in the operating controls of valves, mechanical apparatus, remote controls, drives for transmission of power and other right angle drives.

Write for free catalog giving complete information.

PIEZO MANUFACTURING CORPORATION
MARINER'S HARBOR
STATEN ISLAND • NEW YORK

If you write make identify as IEN - 13556

New! Low-Cost! - Wide-Range! VARIABLE Speed Sheaves
Easily Attached to Any Machine

1/15 TO 15 HP.
RATIOS UP TO 8:1

● Simple, sturdy Speed Selector Sheaves are applied to any machine in only a few minutes . . . giving you wide-range speed control at extremely low cost. You get wide speed variations with standard V-belts, since two variable pitch sheaves are used. Eliminates bulky sliding motor bases, movable jackshafts and wide, high-cost special V-belts.

- Standard V-belts
- Automatic belt alignment
- Fixed shaft centers
- LOW COST

Write FOR FREE BULLETIN

SPEED SELECTOR INC.
118-A Noble Court • Cleveland 13, Ohio

If you write make identify as IEN - 13557

CHASE

RED TYE Drawstring Bags

Fine quality cotton bags for mailing and storage of small parts and samples. Also twin mailers with envelope for letter and sturdy cotton bag for sample or part. There is a Red Tye parts bag, and mailing bag for just about every need. Write us today for information. Your inquiry will be given prompt attention.

CHASE BAG CO.
General Sales Offices:
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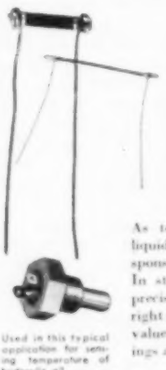
Chicago 6, Ill.

If you write make identify as IEN - 13558



Used in this typical application for sensing temperature of hydraulic oil.

just right for your job!

BENDIX-FRIEZ

high-precision thermistors

As temperature measuring elements and liquid level sensors, these temperature responsive resistors are the best you can buy. In standard or special types, their high-precision manufacture makes them precisely right for your job when it comes to resistance values, size, temperature coefficient, mountings and quality. Ask us about applications.

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Size (inches)	@ +30°C.	@ 0°C.	@ −30°C.
.140 x .75	45.0 ohms	86 ohms	194 ohms
.040 x 1.5	12,250 ohms	26,200 ohms	65,340 ohms
.018 x 1.5	35,000 ohms	82,290 ohms	229,600 ohms

Write for details.

FRIEZ INSTRUMENT DIVISION of Bendix Aviation Corporation
1428 Taylor Avenue, BALTIMORE 4, MARYLAND
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If you write maker identify as IEN - 13559

Yes! THRIFTMASTER makes ALL TYPES of DRILLHEADS

Universal Joint Drillhead . . . Full Ball or Bronze Bearing Construction Standard and Heavy Duty. From ½" Minimum Centers up. Capacities to 1" in Steel.

Gear Driven Electric Type Adjustable Drill Head . . . Enclosed, Full Ball Bearing Construction.

Special Fixed Center Drillhead . . . Full Ball Bearing Construction.

- We Stock or Can Build the Right Drillhead for Your Job.
- Write for THRIFTMASTER Complete catalog or phone for a rush, on-the-spot, quote.

Subsidiary of Thomson Industries, Inc.

THRIFTMASTER Products Corporation

1040 N. Plum Street
LANCASTER, PENNA.

Also makers of
DORMAN AUTOMATIC REVERSE TAPPERS

If you write maker identify as IEN - 13560

Atomizes Oil Into Mist!
Circulates It Through Tubing To Bearings!

ALEMITE OIL-MIST

EXTENDS BEARING LIFE!
STOPS OIL DRIPPAGE!
ENDS PRODUCT SPOILAGE!

What it is: Alemite Oil-Mist is a fully automatic system using air-borne oil for machinery lubrication. It is an amazingly simple lubricator which applies a constant uniform oil film to groups of bearings designed for either oil or grease lubrication.

A unique lubrication system. Oil-Mist operates on compressed air—without any moving parts. A basic system consists of (a) Lubricator, (b) Solenoid Control, (c) Water Separator, and bearing fittings and tubing.

How it works: The Oil-Mist Lubricator atomizes oil into microscopic particles which are carried in the air stream and distributed through tubing to bearings.

Here Oil-Mist is applied to 8 bearing points on a 45-ton press. The entire press is lubricated perfectly with an oil consumption of only three-quarters of an ounce per 8-hour day.

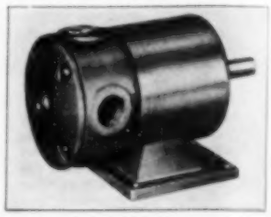
Get the facts NOW!

Just out! This new catalogue brings you the complete story on Oil-Mist. Specifications, models, typical applications, actual case histories. Get yours now. Write Alemite Division of Stewart-Warner, Dept. K122, 1850 Diversey Parkway, Chicago 14, Illinois
*Name on request

If you write maker identify as IEN - 13562

SIGNALING . . Switch assembly shows forward and reverse rotation

Source: WINTERBURN MFG. CO.
P. O. Box 386-A, Putnam, Conn.



Also suited for control

Model 2130 is a new assembly of the company's Danic switch, previously described IEN-207-52, to close signal circuits on both forward and reverse rotation of a machine shaft to which the switch is connected. It will also indicate idling when the drive shaft is stationary and both circuits are open. The switch mounts two sets of snap action single pole double throw contacts rating 10 amp. on 110-volt ac. Assembly is in a metal housing with the drive shaft extending from one end. Dimensions are about 7¼ by 4⅛ by 3⅝ inches.

The contact assemblies are mounted in a compartment at one end of the housing where they are sealed from an enclosed compartment in which two discs are mounted on ball bearings to face each other. One disc is secured to the drive shaft. The other disc floats free and carries permanent magnets. The compartment is partially filled with silicone fluid at the factory.

Rotating the drive causes its disc to rotate and transfer energy to the second disc through the silicone. This moves the permanent magnets to close the indicating circuit in one direction or the other. Action will take place when speed is at 10 rpm. or more. Rotation can be as high as 5,000 rpm. without harming the mechanism. Temperature range is from minus 20 to plus 250 deg. F. Required driving torque is 4 inch ounces for the new assembly.

If you write maker identify as IEN - 13563

CONSTRUCTION . . Pneumatic equipment to "gun" concrete and refractories

Source: AIR PLACEMENT EQUIPMENT CO.
1007-13 W. 24th St., Kansas City 8, Mo.

Also will sand blast

Bondactor 1250 is a new and larger size of the company's pneumatic concrete handling equipment, previously described IEN-8957-52. The new assembly will deliver, through its gun type nozzle, any cementitious material from heavy chrome-type refractories to light weight insulating concrete. Operation is on a 105 or 210 cu. ft. compressor in two available sizes rating 1½ and 3 cu. yd. of concrete per hour.

Dry sand and cement are filled into the upper hopper in measured batches and are "locked" through the central chamber into the bottom delivery chamber. They ride dry through the delivery hose to the gun where separate air and water produce the correct mix for delivery. Air pressure, introduced into the machine, is the moving force for the dry materials.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13564

SAVE UP TO 76% PACKING TIME!

JIFFY PADDED SHIPPING BAGS

are widely used for shipping of accessories, spare parts, machined parts, hand and machine tools, semi-fragile and non-fragile items. These ready-made, self contained shippers complete entire shipping operation in 2 simple steps.

INSERT ITEM
CLOSE BAG—either STAPLE or TAPE

Full protection to contents is assured by the thick, built-in padding between the double walls of moisture proofed kraft.

AVAILABLE IN 8 SIZES
FREE SAMPLES ON REQUEST

JIFFY MANUFACTURING COMPANY
188 FLORENCE AVENUE • HILLSIDE, NEW JERSEY

If you write maker identify as IEN - 13565

OTC

REPLACE 29 SIZES WITH THESE TWO

NEW GIANT ALLOY adjustable wrenches

THINNER-LIGHTER-STRONGER

Until now 29 wrenches have been needed to handle the jobs done by these two new alloy adjustable wrenches. They are THIN—to get at the work easily. Strong—designed for added strength at leverage points. Light—to make job servicing easy. Economical—saves time, tools and materials. Large jobs become simple ones.

Giant alloy wrench No. OA-24 is 24" long, ⅞" thick, weighs only 10 lbs. and adjusts to 13 standard sizes from 1⅛" to 2⅞". OA-16 is 15" long, 1⅛" thick, weighs only 22 lbs. and adjusts to 16 standard sizes from 2 15/16" to 4¼".

REPLACE 29 SIZES PATENT APPLIED FOR

ANOTHER EXAMPLE OF ENGINEERING THAT MAKES OTC TOOLS OUTSTANDING

OWATONNA TOOL CO.
371 CEDAR ST., OWATONNA, MINNESOTA

If you write maker identify as IEN - 13566

This Little Tool Pays For Itself Every Week In The Year

New DREMEL Moto-Screwdriver for small screws

$24.50 Model SD-2 For Screws No. 4 to No. 8 (Screwdriver Bit not included)

$19.50 Model SD-1 For Screws No. 0 to No. 4 (Screwdriver Bit not included)

Here's greater efficiency for you—right in the grasp of your hand. With a new Dremel Moto-Screwdriver, operators on assembly work can drive five or more **free-running screws or nuts** in the time it takes to drive one by hand. A slip clutch prevents stripping screw or hole threads; bits are removed simply, by hand; and the machine can readily be used for unscrewing work. Many companies report it paid for itself in the first day of service; nearly everyone says it pays back its small cost every week in the year.

Ask your dealer or send for a free factual data sheet on the operation of this time-saving tool that will start you on your way to lower the cost of production in your plant. Write:

DREMEL MFG. CO.
2300 18th St., Racine, Wis.

If you write maker identify as IEN - 13567

PRATT & WHITNEY KELLERFLEX CARBIDE BURS

MASTER-GROUND BY MACHINE INSTEAD OF BY HAND

BRING YOU THESE IMPORTANT ADVANTAGES

1. BEST PERFORMANCE . . . because only master-ground burs have the **superior balance** and accuracy that assures faster, smoother cutting.
2. EXACT DUPLICATES . . . All Pratt & Whitney Master-Ground Burs of a given size and shape are exactly alike. You can order replacements by number and be sure of identical performance.

BUY BUR ENGINEERING . . . don't guess. Buy Pratt & Whitney Kellerflex Carbide Burs and know you'll be getting the toughest, fastest cutting tools of their type ever made. Write today on your Company letterhead for your copy of the P&W Bur Catalog.

PRATT & WHITNEY
DIVISION NILES-BEMENT-POND COMPANY
WEST HARTFORD 1, CONNECTICUT, U. S. A.
BRANCH OFFICES IN PRINCIPAL CITIES

If you write maker identify as IEN - 13568

New Lansing BIN TRUCK

This new truck has won immediate acceptance from industry. Large 14 gauge bin body is 22" deep by 42" x 26". Weight only 165 pounds. Two rigid and two swivel casters for easy maneuverability. Choice of roller bearing rubber, plastic or semi-steel wheels. Special low price, custom painted in lots of 10 or more.

Ask your distributor or write for details today.

LANSING CO. LANCO MATERIAL HANDLING EQUIPMENT — LANSING, MICHIGAN

If you write maker identify as IEN - 13569

Plants and machinery buried in dirt and debris won't meet our country's increasing production demands. Keep your plant clean at all times. Doyle Vac-Its are vital to your defense programs. Write Doyle today. No obligation.

Model 218

Doyle VACUUM CLEANER CO.

2235 Stevens St., S. W. Grand Rapids 7, Michigan

If you write maker identify as IEN - 13570

REVOLVATOR CO.

REVOLVATOR CO.
8859 Tonnele Ave., North Bergen, N. J.
Gentlemen:
We want to know, without obligation, all about Revolvator Go-Getter Pallet Type Liftrucks.
Name
Position
Company
Address

If you write maker identify as IEN - 13571

HEATING . . Electric jacket releases meltable materials from drum

Source: HERON HEATING DEVICES LTD.
29 Oxford St., Newcastle upon Tyne 1, England

Made in England

Cylindrical housing is insulated inside and equipped with an electric heating element. It is designed for suspension from overhead so it can be lowered to surround a drum containing a meltable material. When the element circuit is closed the temperature rises to melt the material and release it from the drum. Weight is taken by a suitable counterweight so an operator can move the jacket up and down without difficulty. Sizes, ratings and current characteristics are subject to specification. The heater will empty a 400-lb. drum of bitumen in about 7 min. or a 400-lb. drum of petroleum jelly in 5 minutes.

If you write maker identify as IEN - 13572

PAINTING . . Synthetic enamel to decorate polyethylene products

Source: SCHWARTZ CHEMICAL CO.
324-28 W. 70th St., New York 23, N. Y.

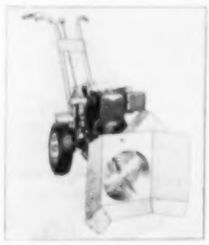
Available in range of colors

Polynamel is a new finishing material characterized by its ability to adhere to chemically-inert polyethylene surfaces and to withstand finger nail and scotch tape tests. It will not peel or chip. It is tough, flexible and can be applied by spray or brush. Best results are obtained by baking or forced drying at 150 deg. F. for an hour. The material is packaged in 1 and 5-gal. cans and 55-gal. drums.

If you write maker identify as IEN - 13573

SNOW PLOW . . Engine driven, gathers and throws snow to one side

Source: GEORGE GARDEN TOOL DIVISION
10 Garden St., Sullivan, Ill.



About $150

Gasoline engine, rated at 2 hp., drives on the two 12 by 3.00 semi-pneumatic tires with which this new snow plow is equipped. The engine also drives a centrifugal blower assembled in a gathering hood. The blower delivers the snow through a duct to one side. The plow will clear a 24-in. path in dry snow, a 16-in. path when the snow is wet at a speed of about 1 mile per hour.

Weight is 103 pounds. The tractor alone with the snow plow head removed can be employed with a number of other interchangeable attachments.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13574

If you write maker identify as IEN - 13575

C-D-F Plastics Machining Notebook

Tells how to save time, money in fabricating laminates, fibre, mica, fabric-based plastics.

● If you fabricate plastics here's a vital new manual for you! Solves machining and forming problems, gives tool speeds and punch press data. Helps cut waste of material and time; simplifies ordering. Contains latest shop-tested information. Write for your free copy now!

C-D-F has sales engineers in principal cities.

Continental-Diamond Fibre Company
main office: NEWARK, DELAWARE, U.S.A.

If you write maker identify as IEN - 13576

Use Resistance Welding To Save Materials

PS Pad PG Pin PC Pad

OHIO Pads and Pins for Projection Welding
Material: Low Carbon Steel

For samples and information about Ohio Pads and Pins for projection welding, send to

The Ohio Nut and Bolt Co.
33 First Avenue Berea, Ohio

If you write maker identify as IEN - 13577

An accurate inexpensive and portable machine for engraving name plates and panels, forming small molds and dies, and profiling small part. Geometrically correct for true three dimensional work. Accurately duplicates master copy in metals, plastics or wood. Rugged, sturdy construction.

COMPARE THESE SUPERIOR FEATURES

- Engraves in 2 or in 3 dimensions.
- Pantograph permits 4 reduction ratios.
- Micrometer depth control graduated in thousandths of an inch.
- High speed, ball bearing spindle.
- Chuck 1/4" to take variety of small tools, burrs, mounted points, as well as standard cutters.

Send for Illustrated Catalog

MICO INSTRUMENT COMPANY
81 Trowbridge Street Cambridge, Mass.

If you write maker identify as IEN - 13578

FOR PUBLIC ADDRESS, RADIO, and kindred fields, specify JONES 400 SERIES PLUGS AND SOCKETS of proven quality!

P-406-CCT

S-406-AB

Double Contact Area

Phosphor bronze knife-switch socket contacts engage both sides of flat plug contacts.

Socket contacts phosphor bronze, cadmium plated. Plug contacts hard brass, cadmium plated. Insulation molded bakelite. Plugs and sockets polarized. Steel caps with baked crackle enamel. 2, 4, 6, 8, 10, 12 contacts. Cap or panel mounting.

Information on complete line, in Jones Catalog 18: Electrical Connecting Devices, Plugs, Sockets, Terminal Strips. Write

Send for complete data on this new basic improvement!

Jones HOWARD B. JONES, DIVISION

If you write maker identify as IEN - 13579

52-Page Thermostat Catalog shows you . . .

How To Get Closer Temperature Control At Lower Cost

This Fenwal catalog is the most comprehensive guide to thermostat application ever published. It shows you:

WHY Fenwal THERMOSWITCH® thermostats respond at the preset temperature you want (between −100°F and +1500°F) within the desired operating differential (can approach 0.1°F in a well-designed system).

HOW to choose the right THERMOSWITCH unit from the ten standard types for controlling temperatures of solids, liquids or gases.

WHERE to apply THERMOSWITCH controls in relation to heating elements in ovens, incubators, stills, dryers and other equipment.

WHEN special modifications may be added to standard THERMOSWITCH units to fit specific conditions.

HOW MUCH standard THERMOSWITCH thermostats and special modifications cost. You'll be surprised at the low list prices.

SEND FOR YOUR FREE COPY of this new Fenwal catalog (No. 400) today. Fenwal, Incorporated, 712 Pleasant St., Ashland, Mass.

Fenwal

THERMOSWITCH®

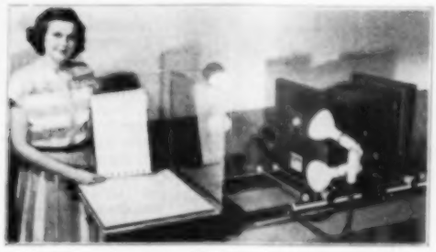
Electric Temperature Control and Detection Devices

SENSITIVE . . . *but only to heat*

If you write maker identify as IEN - 13581

PRINTING . . Electrostatic equipment makes off-set paper duplicating masters

Source: HALOID CO.
47 Haloid St., Rochester 3, N. Y.



Process explained in XeroX Bulletin

A new camera has been developed in connection with the company's XeroX equipment, previously described IEN-0801-51. Large engineering drawings or other copy can be reproduced with a 50 to 150 per cent reduction to an 8½ by 13-in. XeroX plate from which off-set paper masters are made to produce multiple copies on an off-set duplicating machine. The previous camera was capable only of copying size for size and was limited to 8½ by 13 in. originals. Multiple copies of a drawing, chart, report can be reproduced by a combination of xerography in the off-set duplicating process in about 3 min., including the time required to make the paper master.

The new camera mounts on a 60 by 24-in. table. It employs an F-10 process lens with 10¼-in. focal length. The assembly includes four 150-watt reflector floodlights, a 17 by 22-in. copy board, an electric timer with a range maximum at 60 sec., focusing by percentage scale or direct on ground glass, and an electrically operated shutter.

If you write maker identify as IEN - 13582

TESTING . . Atmosphere chamber to vary test temperature and humidity

Source: TENNEY ENGINEERING INC.
24-28 Avenue B, Newark 5, N. J.

An economical design

Humidity can be set or varied in a range between 20 and 95 per cent and temperature can range between 35 and 185 deg. F., with minimum dew point at 33 deg. F., in this new standardized line of atmosphere test chambers. The new equipment is known as Series TH and is available in five basic chamber types with inside dimensions ranging from 22 by 19 by 48 inches to 48 by 24 by 48 inches.

Each assembly mounts indicating thermostatic controllers, air circulating blower and stainless steel interior and exterior paneling. The equipment meets some 20 schedules to which government agencies and manufacturers of equipment for the government must conform. Application can be made in equipment and packaging test under any atmosphere conditions within the limits named.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

If you write maker identify as IEN - 13583

AND . . . OUR NEW HEAT RESISTANT NyLoc* CABLE CLIP

For aircraft use and other severe conditions

IT'S ALL NYLON

- TOUGH
- STRONG
- LIGHT
- NON-CORROSIVE

Complete range of sizes to hold cables ⅛" to 1¼" in diam.

For samples and details, write direct to mfr.:

WECKESSER CO. 5261 N. Avondale Ave., Chicago 30, Ill., Dept L

If you write maker identify as IEN - 13584

There's a CASH-ACME Automatic Valve to handle anything that flows—Water, Air, Steam, Gases, Chemicals, Refrigerants, Oil, Gasoline and all other types of liquids.

Laundry Pressing Equipment Manufacturer Specifies CASH-ACME

If you have the problem of finding a lifetime valve that will turn in a consistent performance year after year on the product you manufacture, write CASH-ACME today. We can show you the lifetime installation to handle pressure control without failure and help with the successful operation of your equipment.

CASH ACME SILENT SENTINEL Automatic Valves

A. W. CASH VALVE MANUFACTURING CORP.
6612 E. Wabash Avenue
Decatur, Illinois

If you write maker identify as IEN - 13585

LOOK

FREE fan catalog for '53!

New models, new finishes have been added to the Emerson-Electric fan line—most complete fan line in America. See these fans for every commercial, industrial and institutional use. For free catalog write Dept. T106.

THE EMERSON ELECTRIC MFG. CO.
St. Louis 21, Mo.

EMERSON ELECTRIC
FANS • MOTORS APPLIANCES

If you write maker identify as IEN - 13586

WANT 2 or 2,000,000?

Do you need small tube-like parts with an unusual *combination* of properties? Do you need them in big quantities? Investigate the speed and ease with which Synthane laminated plastics can be machined on automatic screw machines—in your shop, or in ours. Mail the coupon today for complete information about Synthane fabrication facilities.

SYNTHANE

Manufacturers of laminated plastics
SHEETS
RODS • TUBES
MOLDED-LAMINATED
MOLDED-MACERATED
FABRICATED PARTS

SYNTHANE CORPORATION
South River Road, Oaks, Pa.

Gentlemen:
Please send me without delay, or obligation, the Synthane Machining Folder.

Name _____
Address _____
City _____ Zone ____ State _____

If you write maker identify as IEN - 13587

WICKWIRE ROPE SLINGS

in braided and single part construction

Braided slings made by Wickwire give you these advantages:

- Extreme flexibility
- Non-kinking properties
- Better conformation to irregular surfaces
- More even load distribution
- Will not take a permanent set

Write or call our nearest sales office for full details.

THE COLORADO FUEL AND IRON CORP.—Abilene (Tex.) • Denver Houston • Odessa (Tex.) • Phoenix • Salt Lake City • Tulsa
THE CALIFORNIA WIRE CLOTH CORP.—Los Angeles • Oakland Portland • San Francisco • Seattle • Spokane
WICKWIRE SPENCER STEEL DIVISION—Boston • Buffalo • Chattanooga Chicago • Detroit • Emlenton (Pa.) • Philadelphia • New York

WICKWIRE ROPE
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as IEN - 13588

Any Temperature Between 325° and 1800° Maintained Accurately

HUPPERT *Model 2 DeLuxe* FURNACE

You couldn't ask for a more dependable furnace for small unit production requiring continuous operation and long hard usage. Accurate control assures you of constant temperatures between 325° and 1800°F . . . always. I. D. 4¼" x 3½" x 4¼". 110 Volt A. C. Current Consumption 900 Watts.

$80.00 All Steel Construction

$95.00 Stainless Steel Construction

OTHER MODELS

	I.D.	Temp. Range	Wattage	PRICE All Steel
Model No. 22 DL	4½" x 3½" x 9"	350° - 1800°F	1600	$110.00
Model No. 4 DL	4½" x 3½" x 5½"	250° - 1800°F	1200	110.00
Model No. 5 DL	4½" x 3½" x 9"	800° - 1900°F	1750	172.00
Model No. 9A DL	6" x 6" x 6"	250° - 1900°F	2000	200.00
Model No. 10 DL	9" x 6" x 6"	250° - 1900°F	2000	215.00

(Also available in stainless steel at slight additional cost)

Write for catalog, illustrating and describing other models

K. H. HUPPERT CO.
6856 Cottage Grove Ave. Chicago 37, Illinois
Manufacturers of Electric Furnaces and Ovens

If you write maker identify as IEN - 13589

THE HP-600

ARBOR PRESS

For EFFICIENCY and ECONOMY

For light high-speed production and assembly presswork. Provides 800 lbs. of sensitive pressure and sensitive control. Frame, table and table standard are close grained iron castings, well braced and accurately machined. Ram and pinion are special steel. Three slots for arbor work—¼", ½" and ¾" wide. The ideal "Pressure Tool" for model makers, jewelers, instrument makers, radio men, research laboratories, schools, light production work, etc.

Straightening attachment available at $4.95

$14.00 POSTPAID U.S.A.

Write for further information.

H. D. HERDER TOOL SPECIALTIES
3724 E. MICHIGAN AVE. KALAMAZOO, MICH.

If you write maker identify as IEN - 13590

CRANE . . Mobile assembly converts to ¾ yd. shovel or dragline

Source: HARNISCHFEGER CORP. 4402 W. National Ave., Milwaukee 14, Wis.

For yard and construction service

Miti-Mite Model 55 is a new engine driven crane, normally equipped with a 25 ft. boom, turntable mounting and engine drive. It is designed to mount on any make of truck with suitable capacity for its 7½-ton lifting ability. The crane boom can be removed and replaced with a welded steel ¾-yd. shovel or with a trench hoe, clam shell bucket, or dragline. When set up for dragline operation it provides a direct line pull of 8,000 pounds.

The housing carrying the machinery is 1-in. steel plate in welded assembly and carries the integral counterweight. Control centers at lever operated hydraulic valves. The transmission is standard automotive design providing four speeds.

If you write maker identify as IEN - 13591

ADHESIVE . . Quick setting thermoplastic, to bond, fill, seal

Source: AMERICAN CONSOLIDATED DENTAL PRODUCTS CO. P. O. Box 2015-A, Philadelphia 3, Pa.

Sample available upon request

Type F-88 is a new powdered material to mix with various liquids in production of a thick, creamy paste. This paste can be employed to join metals, wood, plaster, porcelain, stone, concrete, glass. The material sets hard in air or under water in intervals minimum at 5 min., depending upon the liquid employed. Packaging is in standard container kits weighing to 100 lb. and in a number of colors.

If you write maker identify as IEN - 13592

ENGRAVING . . Master copy dial for standard machines, 41 characters

Source: H. P. PREIS ENGRAVING MACHINE CO. 145 Industrial Branch, Hillside, N. J.

Paste No. 1

Characters on this new rotating master dial can be specified at ⅝, ½ or ¾ in. in height and in any of several printing styles including the Gothic shown in the illustration. The dial is a little over 10 in. in diameter and is designed to mount on the copy table of any standard engraving machine. The characters are brought into position one at a time while moving the table ahead one standard space. A ratchet locks position while a character is being traced.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13593

new...complete

FREE CATALOG

introduces

ILLINITE

STANDARD CUTTING TOOLS

- Complete line illustrated
- Specifications and prices included
- Indexed for quick reference

GET YOUR COPY NOW
. . . from your ILLINITE distributor or write
ILLINOIS TOOL WORKS
2501 North Keeler Avenue • Chicago 39, Illinois

If you write maker identify as IEN - 13594

KEEP OUTSIDE CREWS WARM WITH PROPANE* PORTABLE *HEAT*

● With this new Mutual industrial heater you can help eliminate absenteeism this winter by insuring greater comfort and working efficiency for outside crews. This handy Portable Propane Heater is easy and safe to use. Ideal for telephone workers, construction and field survey shelters, small army type field tents, brooders, milking sheds and many industrial uses.

11,000 B.T.U.

Starts instantly without pumping or priming. Burns clean without smoke or gas fumes. May be used in confined quarters. Has heavy steel bottom to prevent tipping. Heating unit available with or without Propane cylinder. ORDER NOW WHILE STOCKS ARE AVAILABLE.

BENCH TYPE

*Liquefied Petroleum Gas

Mutual LIQUID GAS EQUIPMENT CO., Inc.
3600 WEST IMPERIAL HIGHWAY, INGLEWOOD, CALIF.

If you write maker identify as IEN - 13595

CONTROL *for the "High Iron"**

*Railroad talk for "Main Line"

Model railroaders demanded positive control for their trains with indicating meters to judge power and performance.

The challenge was met by the A. C. Gilbert Company with their model 198 Transformer which called for accurate voltage and ampere meters, with definite size limitations, to be produced at an economical cost. STERLING engineering and production experience soon had this order on the "right track."

Your products, too, can ride the "High Iron" to greater profits with STERLING'S ability to produce just the right indicating meter for your needs at moderate cost. It might even be a standard model, readily available, that will meet your requirements. Write today for complete facts.

STERLING MANUFACTURING CO.
7201 Wentworth Avenue
CLEVELAND, OHIO

If you write maker identify as IEN - 13596

RUBBER-TO-METAL

BONDING

Through modern compounding and adhesive techniques developed in the Acushnet laboratories, the best properties of metal and rubber (natural & synthetic) can be combined in one bonded unit to obtain strength, toughness and resiliency, as well as shock and vibration absorption, sound abatement, electrical insulation or conductivity, corrosion and abrasion resistance, etc. Our engineers will gladly study your prints and make prompt recommendations.

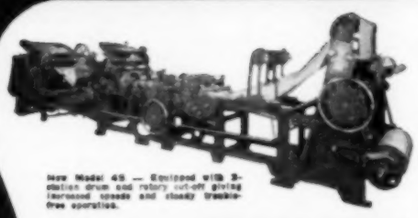
Acushnet PROCESS COMPANY

Send for your copy of Acushnet illustrated catalog supplement—"Rubber-to-Metal Bonding"

Address correspondence to 760 Belleville Ave., New Bedford, Mass.

If you write maker identify as IEN - 13597

60 years of dependable service



New Model 45 — Equipped with 3-station drum and rotary cut-off giving increased speeds and sturdy trouble-free operation.

POTDEVIN

SATCHEL-BOTTOM

PAPER BAG MACHINES

Makes a wide range of bags from 5 lb. sacks to huge super-market carrier bags. Has adjustable former to vary sack widths, trade-mark imprinting unit, 2 hole punch and scoring device for string handles, roll lifting mechanism for easier loading.

Can be directly connected to a Potdevin multi-color aniline press. Compensator and electric eye can be added for pre-printed papers as well as liner for two-wall (duplex) bags.

Literature on request.

POTDEVIN MACHINE CO.

213 North Street • Teterboro, New Jersey

Designers and manufacturers of equipment for Bag Making, Printing, Coating, Laminating, Gluing and Labeling.

If you write maker identify as IEN - 13598

RE-ORDERS

From Prominent Users of More Than 10 Years Prove the DEPENDABILITY of

JOHNSON METAL CUT-OFF BAND SAWS

They Buy

AGAIN and AGAIN!

There is nothing more convincing of the excellence of a product than constant re-orders. . . . And that is what Johnson enjoys. . . . Users over a period of years prefer to re-order Johnson Band Saws because they're satisfied; they have confidence in Johnson Saws. They know from past experience that they are getting the best value for their money, the best performance. You, too, should investigate this leading line. Learn about Johnson's high machining standards, close tolerances, speed, accuracy and adaptability. Write for catalog today.

There is a Dealer Near You

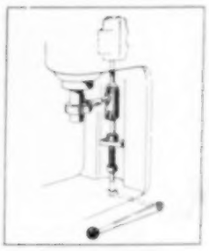
Model J, pictured, 10"x18" Capacity, available as a wet or dry cutting machine. Also Junior Model B, (with or without casters) 5" x 10" Capacity.

JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

If you write maker identify as IEN - 13600

PRESS . . Hand hydraulic control for sensitive action with Multipress

Source: DENISON ENGINEERING CO.
1158-62 Dublin Road, Columbus 16, Ohio



For any Multipress

Touch Control trade names a new lever operated valve control that is now available for the company's Multipress line. The hand lever can be operated to provide a minimum ram stroke of about $\frac{1}{16}$ in. up to a maximum of 6 to 15 in. depending upon the model Multipress. Rapid reciprocation of the lever through a short distance is accompanied by instantly responding ram reciprocation also through a small stroke. Any other type of movement through a given distance is duplicated by the ram for sensitive control of action.

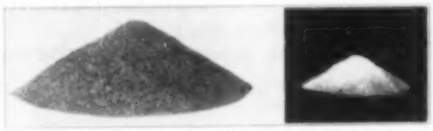
Depressing the hand lever raises a spring backed rod which acts through a yoke and clevis to the hydraulic control valve in the machine. This movement opens the pressure port in the valve to bring the ram downward. The downward movement is accompanied by link action that returns the valve to closed position where it remains in neutral with the ram stationary until the lever is moved again. When the ram contacts the work it will exert as much force as the operator indicates by movement of the lever.

A pressure gage on the press tells the operator the force needed to perform a certain job. Set-up can be made for continued repeat action to reproduce predetermined conditions for production line operation. The control permits fast ram approach to be followed immediately by slow power movement. It permits instant reversal from any point in the stroke.

If you write maker identify as IEN - 13601

GRINDING . . Reclaiming service to recover diamond dust from wastes

Source: DIAMOND DUST CO.
15 W. 44th St., Dept. RE, New York 36, N. Y.



Company will pay about $2 per carat

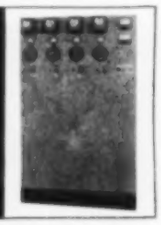
To the left in the illustration is a 453 gm. pile of waste sludge and to the right is a 146-carat pile of diamond dust. It was reclaimed from the sludge by the company's new electro-chemical process. The company offers to apply this process to recover the diamond content from used and broken diamond impregnated grinding wheels, saws, drill bits, tools, sludge or swarf from grinding operations, contaminated diamond powder, lapping cloths smeared with diamond dust. These waste materials are sent to the company's plant.

A two-pound sample of sludge or swarf will be analyzed without charge as a test of the service. The company will advise its value and either pay for the diamond dust it reclaims or return the dust to the sender. In the latter case there is a nominal fee.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13602

For SPECIAL BATTERY CHARGERS ••HERTNER Is Your Best Bet!



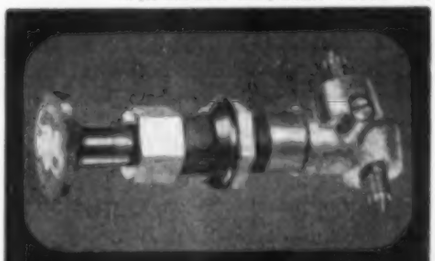
More and more, day after day, Hertner Electric is being called on to design and build special equipment for special battery-charging jobs . . . for electric trucks, motorized hand trucks, mine locomotives, railroads, telephone exchanges . . . wherever battery-charging equipment is required.

Illustrated here is a special-built, 4-circuit, unitized switchboard for charging four separate batteries simultaneously. Of these four batteries any can be one of six different types. This man-hour saver and space-saving charger is equipped with a motor generator with a capacity for four additional circuits, ready for future expansion.

Our staff of experienced engineers and modern production facilities are available to produce custom-built motors and generators to meet your exact requirements. *Standard model Hertner battery chargers are available for immediate shipment.* For complete information consult your electric truck or Hertner representative, or write direct.

THE HERTNER ELECTRIC COMPANY
12690 ELMWOOD AVE. • CLEVELAND 11, OHIO
A General Precision Equipment Corporation Subsidiary
MOTORS • MOTOR-GENERATORS • GENERATOR SETS
Representatives in Principal Cities

If you write maker identify as IEN - 13603



Kohler Engine Primer—specified by manufacturers of Diesel engines and personal airplanes for efficient, reliable priming

KOHLER PRECISION CONTROLS
Aircraft • Industrial • Automotive

Kohler Co. is a leading supplier of precision controls to manufacturers of jet engines, military, commercial and private aircraft, agricultural and industrial test equipment, Diesel engines, automobiles, trucks, and tractors.

Our engineers develop, for volume production, valves, fittings and kindred equipment to specification. Write for catalog.

Kohler Co., Kohler, Wisconsin. Established 1873

KOHLER OF KOHLER
PLUMBING FIXTURES • HEATING EQUIPMENT & ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION CONTROLS

If you write maker identify as IEN - 13604

NEW JACK LOCATES ON ANCHOR BOLT

Empco JACK STYLE JS

- SELF-ALIGNS TO UNEVEN FLOOR
- EASILY LIFTS 8,000 LBS.
- SIMPLY TURN ADJUSTING NUT TO RAISE OR LOWER MACHINE
- VI-SORB MOUNTING PADS ABSORB VIBRATION

Where anchor bolts are used, this new Empco Jack Style JS will save considerable time in setting and keeping equipment level. Tested to support 20 tons and lift 8,000 lbs., this Empco Jack is the answer to any machine installations. Anchor bolt hole through the jack assembly allows clearance for ¾" diameter bolt. This permits the Empco Style JS Jack to be used at the precise spot where equipment was designed to be best supported.
Available in three sizes: 1¼", 2", and 3" (minimum heights) with VI-SORB mounting pads as optional equipment.
Write for specifications and prices of complete line of Empco Leveling Jacks.

EMPCO PRODUCTS

THE ENTERPRISE MACHINE PARTS CORPORATION
2737 JEROME AVENUE • DETROIT 12, MICHIGAN

If you write maker identify as IEN - 13605

BLUE DEVIL
SOCKET SCREW PRODUCTS

Finer

Actual cross-section photo shows structural continuity of Blue Devil cap screw head.

BLUE DEVIL Socket Screws are quality-right for every application. See your distributor for the complete Triple-Ess Catalog . . . or write direct.

Sold Through Authorized Industrial Distributors.

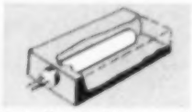
SOCKET SCREWS EXCLUSIVELY!

SAFETY SOCKET SCREW COMPANY
6508 Avondale Avenue
Chicago 31, Illinois

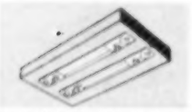
If you write make identify as IEN - 13606

G-E CALROD* HEATERS GIVE DEPENDABLE SURFACE HEATING

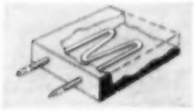
When you need dependable heating for platens, cylinders, dies, rolls or any surface heating application use an easy-to-install G-E heater. Use Calrod heaters for clamping on, wrapping around or spacing away from surfaces. Locating in grooves, or drilled holes and casting into metal. They come in the widest range of standard sizes, ratings and sheath materials to meet almost any conceivable heating requirement.



For a "spot" of heat, insert cartridge heaters into holes.



For a "zone" of heat, clamp on strip or tubular heaters, or



cast dependable Calrod heaters permanently into metals.

FOR FREE BULLETINS

Get complete catalog of heaters and devices, GEC-1005, and "Heating Surfaces," GEA-3097, from your nearby G-E Sales Office or write Sect. 719-26, General Electric Co., Schenectady, N. Y.

* Registered Trademark

GENERAL ELECTRIC

If you write make identify as IEN - 13607

Eliminate topheavy package inventories with Kum-Kleen **laid-on** *labels!*

a common problem ... General Controls Co. of Glendale, California manufactures automatic controls for widely diversified applications. Warehousing formerly required segregation of more than 100 different boxes. Product changes, from time to time, would make certain pre-printed box inventories obsolete.

solved with Kum-Kleen labels ... Now box inventories are maintained by size alone—IN HALF THE ORIGINAL SPACE! A self-adhesive Kum-Kleen label identifies the contents of each box as it is used. According to General Controls, "The unique characteristics of Kum-Kleen labels made this new packaging program possible, and they are saving us many thousands of dollars yearly." Their Avery electric label dispensers "are proving themselves daily to be a most worthwhile investment as a time and labor saver."

how Kum-Kleen labels work ... They're *pressure sensitive*—LAID ON *fast* with a finger-touch—no moistening, no mess! They stay neat and attractive—won't dry out, pop, curl or peel. Patented Avery dispensers—manual or electric—feed die-cut, Kum-Kleen labels off roller tape for quick, clean labeling.

Where can YOU use these labels in YOUR business?

For case histories, samples and prices, please mail the coupon below.

Kum-Kleen | pressure-sensitive | laid-on labels

AVERY producers of pressure-sensitive products since 1935

AVERY ADHESIVE LABEL CORPORATION

117 Liberty St., New York 6
608 S. Dearborn St., Chicago 5
1616 So. California Ave., Monrovia
Offices in Other Principal Cities

☐ Please send case histories, free samples

☐ Have Avery label man call.

name

title

company

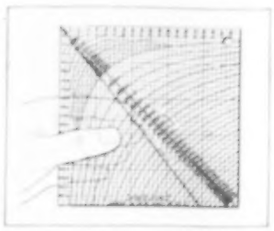
address

Our business is

If you write make identify as IEN - 13609

CALCULATING .. Plastic chart functions as a slide rule and scale

Source: NEW-ERA PRODUCTS
4-8 Peter Cooper Road, Dept. IEN, New York 10, N. Y.



$1.50 each

Space-Scale is a new 5 by 5 in. transparent chart graduated to read direct in sixteenths and eighths or in other fractional inches by employing a constant divider. Two diagonal lines are employed for rectangles and for circular figures. The lines are numbered in black for ⅛-in. divisions, red for 1/16ths.

An instruction sheet accompanies the unit and provides sample calculations to obtain rectangular or circular areas, volumes, to multiply and divide, to obtain squares and square roots, to interpolate. The plastic is transparent Vinylite.

If you write make identify as IEN - 13610

LUBRICATING .. Powdered molybdenum disulfide for high heat and pressure

Source: BEL-RAY CO.
49 Green Village Road, Madison, N. J.

Now packaged in tubes, cans

New form of the company's molybdenum disulfide lubricant is a grease-like compound with packaging in tubes holding 3-oz. and in 24-oz. cans. It is a stable non-melting multipurpose lubricant able to prevent seizing and galling with bearing pressures on the order of 100,000 lb. per square inch. It can be employed on tools, in bearings, on machine ways, for wire drawing. It adheres to metal surfaces and will lubricate in a temperature range between sub-zero and 750 deg. F.

If you write make identify as IEN - 13611

FURNITURE .. Portable bench with 24 in. square bonded wood top

Source: STURDI-BILT STEEL PRODUCTS INC.
622-26 S. Michigan Ave., Chicago 5, Ill.

Utility unit

Shop Tender is a new steel work bench for application beside shop equipment to handle tools and work. It is equipped with a 24 by 24 by 1⅝-in. bonded wood top and with adjustable sides and back that can be dropped flush with the top. The legs are adjustable for 9 height positions between 21½ and 34½ in. above the floor. Equipment includes two hard rubber wheels and a steel sliding door and tool tray. The top is sealed, lacquered and waxed so it is impervious to grease and oil.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write make identify as IEN - 13612

WITH A COLUMBIA

TONG TEST AMMETER

There is no other instrument like a Tong Test—it measures both A.C. and D.C. Readings are made instantly and accurately.

These outstanding features are yours when you use a Tong Test Ammeter:

- No breaking of circuit
- Operated with one hand
- Safe and convenient to operate
- Five types to accommodate cables up to 3⅞", bus bars up to 4½" x ½"
- Light weight—low price
- Scale ranges up to 1000 Amperes
- Voltage attachment available

Write for Tong Test Bulletin IQ-400

COLUMBIA ELECTRIC MFG. CO.
4319 Hamilton Ave., Cleveland 14, Ohio

If you write make identify as IEN - 13613

Increase your storage space 40-50%

New Lewis-Shepard Trucks, like this Spacemaster Model "M", right angle stack *in less than 6 foot aisles*. This means the usual 10 to 12 foot aisles can be reduced at least 40% *making extra space for storage*. And, the Model "M"'s unique design permits weight and dollar savings, too! Weighs and costs only *half* as much as standard electric fork trucks. Yet, throughout, it retains the quality construction for which Lewis-Shepard is famous:

1. Greater work-capacity
2. Faster hauling and lifting speeds
3. Safer reverse operation
4. Smoother, timed acceleration
5. Deadman brake for extra safety

Send for detailed information on this and many other L-S Trucks, riding and "walkie" types, for narrow aisle operation.

LEWIS-SHEPARD Products, Inc.
933 Walnut St., Watertown 72, Mass.

Nationwide Service — See "Trucks, Industrial" in your Yellow Phone Book

If you write make identify as IEN - 13614

Machine de-burring with NOBUR pays BIG production dividends!

NOBUR Tools turn a slow bench operation into fast and efficient machine work! Remove burrs on multi-walled parts with a smooth, clean cutting action that won't mar highly finished surfaces. Eliminate rejects from slow, costly hand work with files, scrapers and abrasives.

Nobur Tools are used on any lathe, drill press, portable drill or flexible shaft. Operation of the double-edge cutting blade is easy and safe ... no skilled help is required, and the spindle never needs to be stopped for either de-burring or chamfering.

Nobur Tools cut freely on either hard or soft metals, are simple in construction and are made in sizes to cover a full range of hole diameters. ***NEW "DS" SERIES extends range of NOBUR applications to holes as small as ⅛" diameter. WRITE FOR FULL DETAILS TODAY!**

Parts like these quickly de-burred with

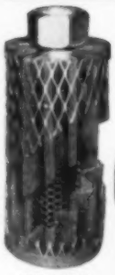
NO BUR TOOLS

NOBUR MANUFACTURING COMPANY
717 N. VICTORY BLVD., BURBANK, CALIF.

If you write make identify as IEN - 13615

Now Available for

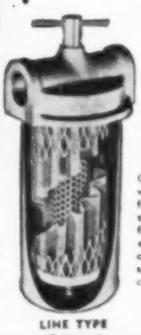
WATER FILTERING



SUMP TYPE (Cutaway)

Capacities of (Line Type) 5 to 50 gpm. (Sump Type) 5 to 100 gpm. Mesh sizes 30 to 200.

The Great



LINE TYPE (Cutaway)

MARVEL SYNCLINAL FILTERS

- EASY TO CLEAN
- OPERATE LONGER BETWEEN CLEANINGS
- EFFICIENT
- NO MOVING PARTS TO WEAR OR GET OUT OF ORDER

Outstanding qualities made Marvel Synclinal Filters the choice for hydraulic oil systems. The same qualities are now available for water filtering, in both sump and line types. Line models operate in any position and may be serviced without disturbing pipe connections.

Write for WATER FILTER DATA

MARVEL ENGINEERING COMPANY
627 W. Jackson Blvd. Chicago 6, Ill.

If you write maker identify as IEN - 13616

ONLY DIMENSIONAIR Gives You ALL This-

FULL 7½" SCALE OF CALIBRATED ACCURACY — *All of it* measures accurately. Not just part of it!

LONGER APPROACH RANGE to measure earlier BEFORE reaching minimum work size. Total minus range .0015".

GREATER CLEARANCE (.0018" up to .0038") so you can check Undersize, Taper, Out-of-Round and Irregular Shape Holes.

STAY-PUT ZERO — DON'T WORRY ABOUT PRESSURE FLUCTUATIONS.

10 SECOND SET-UP — JUST ONE ADJUSTMENT.

ONE MASTER ONLY — FORGET THE IDEA TWO ARE NEEDED.

INTERCHANGEABLE PLUGS — WITHOUT MAJOR ADJUSTMENT.

MORE SENSITIVE TO SIZE VARIATIONS — fully Jeweled Cushioned Movement.

LONGER PLUG WEAR saves you real money.

Try the Federal Dimensionair yourself — compare it with any other air gage. Write today for complete information and prices. FEDERAL PRODUCTS CORPORATION, 2912 Eddy St., Providence 1, Rhode Island.

FEDERAL

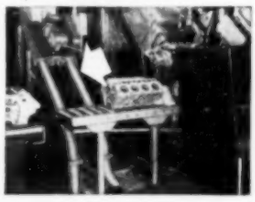
Largest manufacturer of indicating type gages . . . exclusively.

If you write maker identify as IEN - 13617

when the Chips are Down- take 'em OUT with a HOUDAILLE CONVEYOR

Licensed under Hapman's Patents No. 2,147,199 and 2,432,756

All Honan-Crane equipment is sold on a performance guaranteed basis.



In this large motor car plant, Houdaille Enclosed-Flight Conveyor continuously removes chips from pit beneath twin banks of Bausch 12-Station Transfer Drilling Machine. Chips are deposited into portable hopper for disposal. Houdaille Conveyor is ideal for removing small material from confined area. This installation paid for itself out of savings in one year.

Automatic System Solves Difficult Chip and Sludge Removal Problems . . . Cuts Costs, Speeds Production

Houdaille Conveyor's automatic loading and continuous materials transport handles any solid or fibrous waste (chips, abrasive sludge, scale, etc.) which settles to the bottom of a tank or hopper. Many plants of all sizes, in many types of operation, have saved substantially on labor, maintenance, down-time and other production costs by installing one or more Houdaille Conveyor systems.

Check these important Houdaille advantages:

- Eliminates costly manual cleaning and handling methods
- Operates continuously or intermittently as needed without shutting down productive machinery
- Readily adaptable to almost any need, any space or traverse requirement . . . ideal for restricted areas
- Dependable, trouble-free automatic operation; requires little or no maintenance attention; quickly pays for itself out of savings.

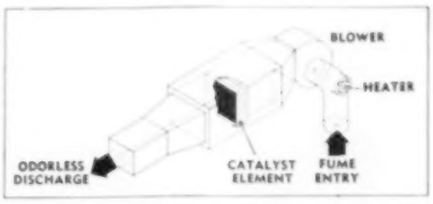
HONAN-CRANE CORPORATION
802 Wabash Avenue, Lebanon, Indiana
subsidiary of **HOUDAILLE-HERSHEY CORP.**

See Honan-Crane Equipment in operation! at the PLANT MAINTENANCE SHOW Cleveland, Ohio, Jan. 19-20-21-22 — Booth 1239

If you write maker identify as IEN - 13619

INCINERATOR . . For burnable fumes, to recover heat and prevent pollution

Source: CATALYTIC COMBUSTION CORP.
4542-46 Grand River Ave., Detroit 8, Mich.



Principles and applications in Bulletin B

The company announces further development of its Suter-Ruff patent catalytic equipment for application with closed or open processing equipment in which burnable fumes are generated. The new development follows initial application of the equipment, previously described IEN-8155-50. It is installed essentially as shown in the illustration.

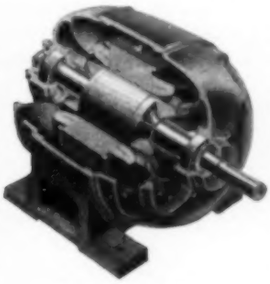
Fumes are collected from the process equipment to move through a duct containing a fuel burner or electric heater where the fumes are heated to oxidizing temperature, in the event that they are introduced below this point. They pass through a circulating or exhaust fan if good stack draft is not available. From there they move through the panel type catalyst element where they are completely oxidized.

Accompanying rise in temperature can be exhausted to the atmosphere, since the burned gases will be colorless and odorless, or the heat can be returned to assist in continuing the oxidizing process or to be employed in other plant processes. There is no appreciable deterioration in the catalytic element.

If you write maker identify as IEN - 13620

MOTOR . . Open, fan equipped to expel lint in textile plant duty

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



No cleaning required

Fan blades, integral with both ends of the rotor in this new open frame motor, draw lint laden air in through openings in the end frames near the shaft and immediately drive it out through adjacent openings so none of it will blow between the rotor and field or lodge inside the frames. The coil end turns are filled with a compound to provide a smooth finish. Design of the cast iron end frames protects the motor against falling objects, dripping liquids and corrosion. Grease reservoirs hold sufficient lubricant for years of operation but fittings have been provided to add lubricant when it does become necessary. Ratings are to specification for speeds at 900, 1,200 and 1,800 rpm.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN - 13621

GOOD NEWS!

NOW — Grind Carbide Tools WITHOUT Diamonds!

★ AVAILABLE IMMEDIATELY

★ 3 SIZES:
14" x 4" x 11"
10" x 2" x 7"
6" x 1" x 4"

★ ECONOMICAL

★ RAPID CUTTING

★ STANDARD PLATE MOUNTING

FINISH-GRIND Carbide Tool-points with BAY STATE Vitrified Wheels.

- Proven in field production tests.
- Cut as fast as diamond wheels.
- Cut costs to a minimum.

BAY STATE

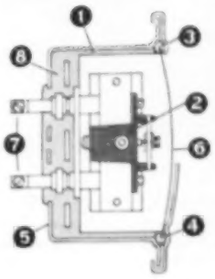
ORDER A TRIAL WHEEL TODAY

BAY STATE ABRASIVE PRODUCTS CO.
Westboro, Mass., U. S. A.
Branch Offices and Warehouses: Chicago, Cleveland, Detroit, Pittsburgh
Distributors — All Principal Cities
In Canada: Bay State Abrasive Products Co. (Canada) Ltd., Brantford, Ont.

If you write maker identify as IEN - 13622

Available NOW! RUGGEDIZED METERS

to meet Sig. C. Spec. MIL-M-10304



8 PLUS Features

Extra "Ruggedized" Features

1. Movement shock-mounted and housed in rubber-lined case.
2. Movement supported by die-cast frame for strength and accuracy.
3. Glass rubber-grommeted and sealed to rubber lining of case.
4. Non-rigid mounting of glass increases resistance to shock.
5. Each meter designed and built to highest quality standards.

Extra Installation Advantages

6. Slight convexity of glass reduces chance of accidental breakage.
7. Terminals tapped and provided with locking screws to facilitate wiring.
8. Damage in wiring reduced by non-rigid mounting of terminals and flexible conductors.

Building rugged electric meters is not new to SUN . . . for over 20 years the automotive industry has depended on SUN as one of the largest "D'Arsonval-type" meter manufacturers—to produce rugged, tough meters for portable field instruments. SUN "Ruggedized" Meters not only meet Specification MIL-M-10304 (Sig.C.) — but also embody many other features that make installation easier and faster. "Ruggedized" Meter Data Bulletin on request.

SUN "Ruggedized" Meters are available as D-C Volt Meters, Ammeters, Milli-ammeters and Micro-ammeters and also may be ordered as rectifier type A-C instruments.

SUN ELECTRIC CORPORATION
6387 Avondale Avenue, Chicago 31, Illinois

If you write maker identify as IEN - 13623

This new DUMORE grinder eliminates hand sharpening of small drills

This remarkable new grinder sharpens small twist drills with amazing speed and precision. Does away with expensive maintenance of 2-lip drills, No. 70 to ¼". Grinds drill point angles — 90° to 150°, clearance angles 5° to 15°. Reclaims small-size and broken drills. Drills stay sharp longer, last longer.

These features make the Dumore Precision Grinder better

EXCLUSIVE FEED-IN ATTACHMENT Eliminates breakage and wheel gouging. Allows fine control of finish cuts.

BROKEN DRILL RECLAIMER — Roughing wheel for grinding and resharpening. Drill rod serves as fixture for wheel dresser.

ECONOMICAL WHEEL COST — No expensive shaped wheels. Withstanding and roughing wheels eliminate frequent wheel dressing.

Ask your industrial distributor for a demonstration, or write

THE DUMORE COMPANY
1319 Seventeenth St., Racine, Wis.

If you write maker identify as IEN - 13624

DO YOU LABEL ROUND CONTAINERS?

. . Tin Cans?
. . Fibre Cans?
. . Glass Jars?

IF YOU DO . . YOU Need THIS NEW BULLETIN!

Your labeled products are competing with thousands for the buyer's attention. Is their outward appearance worthy of the contents? This 8 page Round Container Labeling Bulletin, profusely illustrated, tells you how to achieve clean, neatly labeled, salable containers at low cost. Modern can labeling methods and machines available today to give you top efficiency in your labeling department are fully described. Learn all about the many Paisley scientifically designed Cold and Hot Pickup Gums, Lap Pastes and Spot Labeling Adhesives. Meet the competition in your industry with the help of Paisley Round Container Labeling Adhesives. Send for your copy now.

FREE . . *just paste this ad on your letterhead, indicate your name and mail to us now for your free copy of this helpful 8-page Round Container Bulletin.*

Paisley ADHESIVE

PAISLEY PRODUCTS INCORPORATED
Manufacturers of Glues, Pastes, Resin Adhesives, Cements and Related Chemical Products
1770 CANALPORT AVE., CHICAGO 16, ILL. ★ 820 W. 52nd STREET, NEW YORK 19, N. Y.

If you write maker identify as IEN - 13625

Looking for Better Way to Control Sequence Operations Automatically?

This is it—

STALEY TIME CYCLE CONTROLLERS

Widely used to provide exact automatic sequence control of electrical circuits. Continuous repeating of intermittent cycling. Adjustable cams operate dependable Staley Metallic Mercury Switches for fully enclosed make or break. Standard, interchangeable parts and accessories provide wide adaptability. Accuracy and long life proved in hundreds of installations.

Example: Since 1937 a leading builder of multibank transformers has been using Staley Controllers to provide automatic sequence of tap changing. This equipment is widely used in power stations and for metal-melting furnaces.

If you do things automatically, send for our catalog No. 405

ELECTRIC SWITCH CORPORATION

1304 E. Eleventh Street Columbus, Indiana

If you write maker identify as IEN - 13626

free Bulletin

Atkomatic SOLENOID ELECTRIC VALVES

- Designed for Automatic or Remote Control for operating pressures up to 5,000 psi.
- Full-ported, packless, sturdy, dependable, tight closing.
- Adjustable timing on closing strokes to 500 psi. Eliminates shock on supply lines.
- Handles all media not harmful to bronze. Explosion-proof coil housings available for use in hazardous atmospheres.
- Easily maintained, all parts accessible without removing valve from line.

Write for more complete information

Atkomatic SOLENOID ELECTRIC VALVES

ATKOMATIC VALVE COMPANY

545-A ABBOTT STREET • INDIANAPOLIS 25, INDIANA

If you write maker identify as IEN - 13627

NEW ...Handy Guide to Spark Testing Tool and Die Steels!

Here's all the information you need on Spark Testing to quickly identify standard tool and die steels.

This new, 20-page Carpenter Guide to Spark Testing will help you:

1. Separate mixed tool steel stocks.
2. Double check the type of steel before starting to make a tool or die . . . and before first treating.
3. Segregate tool steel scrap for re-use.

To help conserve tool and avoid heat treating errors that are costly in time, labor and money, get Carpenter's new Spark Testing Guide to work in your plant. This guide is offered free to tool steel users. Fill out coupon, clip and mail coupon, now.

THE CARPENTER STEEL COMPANY

151 W. BERN ST., READING, PA.

Please send me a copy of your new, handy guide to Spark Testing Tool and Die Steels.

NAME TITLE

COMPANY

ADDRESS

CITY ZONE STATE

(Please Print)

To help us get this guide to you promptly, be sure to include your title and Company name.

If you write maker identify as IEN - 13628

FLOORS . . Paste wax applier spreads wax from original container

Source: M & R MFG. CO.
537-41 Ellicott St., Buffalo 2, N. Y.

About $17

RolEas is a new wax applying machine that takes a standard 5 lb. can of paste type wax. The can is inverted, after its cover has been removed, so two floating rollers can remove the wax and transfer it to three applying rollers. These latter units are set in bushings which allow them to ride on the floor surface independent of each other. They spread a uniform coating of wax as the machine is moved over the floor. When the operation has been completed the container can be lifted off, returned to upright position and its lid replaced, if all of the wax has not been used.

If you write maker identify as IEN - 13629

PAINTING . . Self-adhesive masks to keep paint from anodized surfaces

Source: W. H. BRADY CO.
1640 E. Spring St., Dept. 236, Chippewa Falls 9, Wis.

Free samples upon request

New line of Quik-Masks employs Minnesota Mining No. 214 paper masking tape. The pre-cut units are employed on anodized areas that are to be protected from paint that is sprayed on and then baked, at temperatures to 400 deg. F. The adhesive on the mask will not migrate into etched grooves in anodized surfaces and so the masks can be stripped clean after the baking has been completed. Each mask shape is to specification. Small sizes are mounted on dispenser cards. Large sizes are mounted on a folded liner from which they can be removed prior to application.

If you write maker identify as IEN - 13630

MIXING . . Air powered stirrer safe to use on flammable liquids

Source: ARROW ENGINEERING CO.
10 Central Ave., Hillside, N. J.

No sparks

Pneumatic motor in this new portable equipment operates on an air supply between 35 and 100 pounds. It is geared to the impeller spindle to provide a ratio of 7 to 1. It rates 1/6 hp. at 80 pounds. The impeller shaft measures 12 in. in length and terminates in a 2½ in. impeller. Both are made of stainless steel. Application is intended particularly on solvents, lacquers, paints, oils, chemicals, similar liquids.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

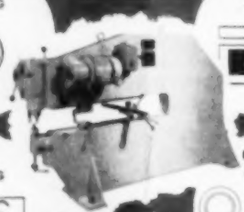
If you write maker identify as IEN - 13631

PULLMAX Does all These Operations

SAVE TIME, LABOR & EXPENSIVE DIES

CIRCLE CUTTING

STRAIGHT CUTTING



SLOT CUTTING

BEADING

CHOICE OF 9 SIZES TO FIT YOUR REQUIREMENTS

FOLDING

From 16 ga. up to 11/32" capacity

LOUVERS

MODERNIZE YOUR SHOP WITH PULLMAX

WRITE FOR LITERATURE AND PRICES

AMERICAN PULLMAX COMPANY, INC.

2459 NORTH SHEFFIELD AVENUE • CHICAGO 14, ILLINOIS

If you write maker identify as IEN - 13632

Get your copy of this NEW BULLETIN!

This important new Bulletin WH-851 explains in detail the causes and damaging effects of costly Water Hammer—and how it can easily be controlled with Williams-Hager Silent Check Valves. Learn how Water Hammer can be quickly and inexpensively controlled *in your piping system*—send for your copy of this new bulletin today.

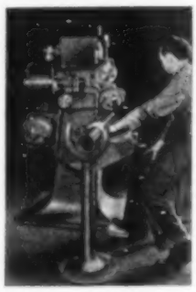
THE WILLIAMS GAUGE COMPANY

1620-22-24 Pennsylvania Ave. • Pittsburgh 33, Pa.

If you write maker identify as IEN - 13633

STEEN PIPE AND TUBE CUT-OFF MACHINES

For faster Cutting . . .



If you cut pipes and tubes . . . in small or large quantities . . . you can cut faster—easier—with a Steen Cut-Off Machine. Available in hand and automatic air-operated models for pipes and tubes up to 12" diam. *Also, Manufacturers of Cut-Off Wheels . . . Chaser and Wheel Grinders.*

Request Circulars Today

Continental MACHINE CO.

SINCE 1919

1982 N. MAUD AVE. • CHICAGO 14, ILL.

If you write maker identify as IEN - 13634

Brand New!

LINEMASTER TWIN COMPACT

THE LIGHTEST, TINIEST, MOST EFFICIENT FORWARD-REVERSE SWITCH

ONLY $8.50* (*less in quantities)

Tell us your special problems and let us quote

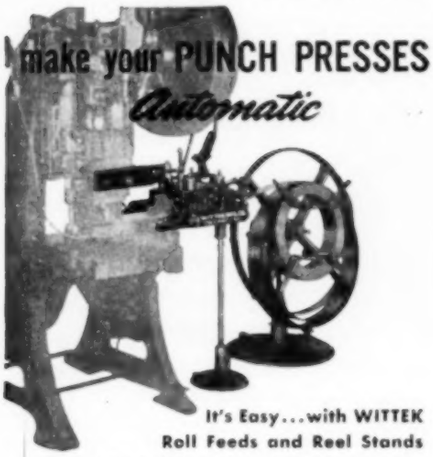
Try TWIN-COMPACT—the new *midget marvel* with twice the size, twice the efficiency of the sensational new LINEMASTER COMPACT, because it works both ways. TWIN-COMPACT is foolproof, sensitive—responds to touch of foot, finger, knee or elbow. SMALL—a pair of 6½-oz. Compacts mounted on a non-skid base. Yet AMAZINGLY RUGGED—made of heavy-gauge steel with handsome black crackle finish. Use TWIN-COMPACT PROFITABLY for an unlimited number of industrial small machine operations.

Write for folder and prices TODAY

LINEMASTER SWITCH CORP.

DEPT. D • P. O. BOX 312 • PUTNAM, CONN

If you write maker identify as IEN - 13635



It's Easy...with WITTEK Roll Feeds and Reel Stands

Wittek Roll Feeds handle any type of coiled strip stock and are made in single roll, double roll, and compound types with straighteners, in models to feed in any of four directions. They are reliable and accurate with simple, quick adjustment of feed length. Standard sizes and models meet a wide variety of press size and capacity conditions.

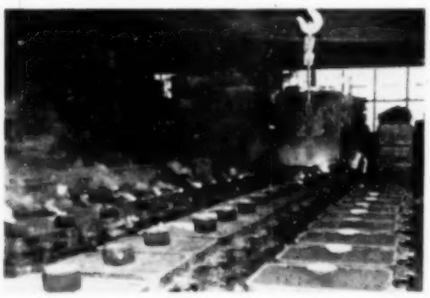
Wittek Reel Stands facilitate handling coiled stock.

Write for full particulars

WITTEK Manufacturing Co.
4336 W. 24th Place, Chicago 23, Illinois

Automatic ROLL FEEDS AND REEL STANDS

If you write maker identify as IEN - 13636



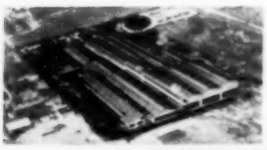
LET RIVERSIDE HELP SOLVE YOUR CASTING PROBLEMS

Riverside Foundry is ready to give you excellent service on cast armor and all types of QQS 681-B materials. **In fact, any steel casting specifications for which your contract might call.** We have a full staff of men who have spent years producing ordnance material.

Our customers include many great names of American Industry: Chrysler, American Locomotive, International Harvester, Fisher Body and Ford Motor Company. **Ask them about Riverside.**

Call or write us at Riverside today.

For a dependable qualified source of steel casting requirements, see Riverside. You give us your drawings. The rest of the job is ours. Save yourself time, worry and loss of production. We are ready to do a complete job for you on any casting requirement.



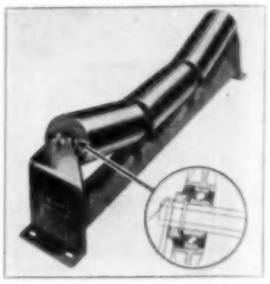
The big modern Riverside Foundry at Bettendorf, Iowa has the best equipment to do the best job.

Riverside Foundry
Bettendorf, Iowa

If you write maker identify as IEN - 13638

CONVEYOR . . Belt idler assembly, factory lubricated, permanently sealed

Source: PALMER BEE CO.
1751 Poland Ave., Detroit 12, Mich.



Ask for Catalog 303-AA

Each ball bearing in this new permanently lubricated belt idler is filled with grease lubricant at the time of assembly and is sealed for life. Both sides of each bearing are fitted with double seals. Broached hexagon bores and hexagon shafts prevent the inner raceways from turning. The shafts are held rigidly in the frame. The ball raceways are corrosion proofed and the metal seal parts are stainless steel.

Assemblies are in straight and troughing design for belts from 14 to 48 in. in width. Roll diameters are 4, 5 and 6 inches. Standard, heavy-duty and self-aligning types available.

If you write maker identify as IEN - 13639

METALS . . Nickel alloys in specified thickness and strip width

Source: AMERICAN SILVER CO.
36-09 Prince St., Flushing 54, N. Y.

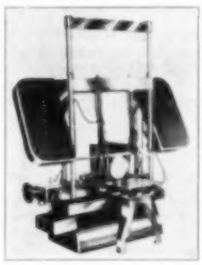
Tolerance to 0.0001 inch

Strip to 8 in. in width and as thin as 0.0005 in. can be specified for production through the company's new rolling equipment in nickel-iron, nickel-chrome, nickel-cobalt-iron, nickel-molybdenum-iron. The company supplies the metal or will purchase it on a contract basis. It also can roll metals sent to it.

If you write maker identify as IEN - 13640

SAWING . . Band saw machine, work to 24 by 24 in., hydraulic feed

Source: W. F. WELLS & SONS
Highway 131, Three Rivers, Mich.



Operates wet or dry

Type J-24 is a new vertical feed band saw machine employing a 1 hp. motor to drive a 1¼-in. blade measuring a little under 17 ft. in length. The blade rides over four wheels in the frame, which is mounted to slide vertically on trussed upright guides. Three cutting speeds are 60, 90 and 120 ipm. Maximum clearance under the blade is 25 inches. Work is held in a vise that can be swiveled to 45 deg. on either side of square. Floor space occupied measures 78 by 38 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13641

from Glass Plates for use in production or product

CROSS SECTION
Grid
Glass
Terminals

Smokeless, dustless electrical heat, radiated uniformly from a strong, tempered glass panel. Secret: A paper-thin aluminum grid fused to the back.

Think of the places in your production process or in your product itself where heating or drying can be done more easily, more safely, more economically with this remarkable new unit. Interested? Send today for our technical folder. Write Dept. IEN-12.

RA-GRID HEATER PLATES
- 9 Standard Sizes: from 6 x 14" to 16 x 28".
- Thickness: ¼". Heat up to 300° F.
- Voltage: 230 max. for 16 x 24" plates.
- Connections: Two terminals.

RA-GRID HEATER PLATES
BLUE RIDGE GLASS CORPORATION • KINGSPORT, TENN.

If you write maker identify as IEN - 13642

Here's **LOW COST OVERLOAD PROTECTION!**

CONSIDERING THE OVERALL ECONOMY, it's hard to beat the *Thermalite* overload indicator, introduced by Allis-Chalmers. Low in original price and costing next to nothing to maintain, it can save you hundreds of man-hours on extensive surveys. It'll help eliminate service interruptions and transformer burnouts.

You'll find it makes overload detection easy, too. You can spot the warning light right from your service truck.

Now available on distribution transformers 100 kva and smaller, 15 kv and below. For more information see your A-C district office. Or write Allis-Chalmers, Milwaukee 1, Wisconsin.

A-3848

Thermalite is an Allis-Chalmers trademark.

ALLIS-CHALMERS A-C

If you write maker identify as IEN - 13643

Find out NOW how to cut fire losses with triple-action WaterFOG Nozzles

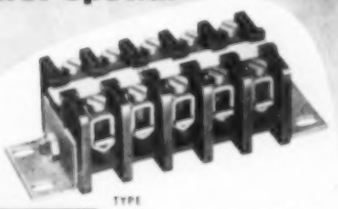
These are the facts you want — all combined in one simple booklet — get the latest and most authoritative information on fire-protection nozzles. Booklet is FREE.

Lightweight Rockwood SG-48 nozzles provide *3 kinds of fire-fighting action.* You can change instantly from high velocity WaterFOG to straight stream to low velocity WaterFOG, depending on the fire you are controlling. Easy to use. Controls and puts out fires in both ordinary combustible and flammable liquids *faster — and with less water.* Operates at 50 psi at the nozzle. Write for Bulletin C-501R. Distributors in all principal cities.

ROCKWOOD SPRINKLER COMPANY
Engineers Water . . . to cut fire losses
40 Harlow Street, Worcester 3, Mass.

If you write maker identify as IEN - 13644

Power Special



CURTIS Type "H" BLOCK

TYPE
Built-up, factory assembled 1 to 30 terminals.

WIRE
AWG No. 8 to No. 4 inclusive.

TERMINALS
High pressure solderless.

RATED
750 Volts between terminals of opposite polarity and to ground. 75 Amps. (Conservative).

MARKER
White marker strip for circuit identification.

Write for Bulletin No. DS-120. For quick reference consult our condensed catalog in the McGraw-Hill Electrical Catalog for Production Engineers.

CURTIS DEVELOPMENT & MFG. CO.
3214 NORTH 33rd STREET • MILWAUKEE 16, WISCONSIN

If you write maker identify as IEN - 13645

small

100 Ampere Frame • 600 Volt CIRCUIT BREAKER

NEW This compact breaker has all the construction features of the larger 100, 225 and 600 ampere frames—yet it's 50% smaller.

Available in 15, 20, 30, 40, 50, 70 and 100 amperes at 600 volts.

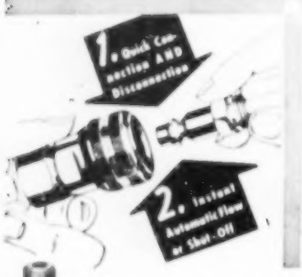
Write for **Bulletin 600** *for complete description of Square D's complete line of* THERMAL-(Coilless) MAGNETIC *Circuit Breakers . . . Address Square D Company, 6060 Rivard St., Detroit 11, Michigan.*

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN - 13646

HANSEN COUPLINGS



GIVE YOU **2** Big Advantages

● With Hansen couplings you save precious minutes every time you change air tools—every time you connect or disconnect a fluid line carrying gas, liquid or grease.

To connect, you merely push plug into socket—flow starts instantly. To disconnect, pull back sleeve on socket—coupling disconnects. Flow is shut off instantly and automatically.

Available in a wide range of sizes and types, each type engineered to meet the specific requirements of your particular application.

One-way shut-off, two-way shut-off, and straight-through types.

Write for Catalog

THE HANSEN MANUFACTURING COMPANY

4201 WEST 130TH STREET • CLEVELAND 11, OHIO

If you write maker identify as IEN - 13647

FREE

IF YOU PRODUCE PARTS THAT REQUIRE FINISHING OF ANY KIND

This amazing 22-page booklet is *guaranteed* to open your eyes! Gives latest, up-to-the-minute facts—figures—photos on advanced barrel finishing. Shows how single unit installation replaces from 2 to 12 men—savings up to 95% on almost all types of parts from large castings to small intricate parts.

Investigate today! Send for your FREE copy of Booklet No. G-12 *today.*

ALNCO Supersheen

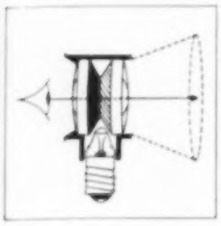
AMERICA'S LARGEST MANUFACTURER OF ADVANCED BARREL FINISHING EQUIPMENT—MATERIALS AND COMPOUNDS

ALBERT LEA, MINNESOTA

If you write maker identify as IEN - 13648

MAGNIFYING . . Illuminated unit mounts lamp in 10X lens assembly

Source: BAUSCH & LOMB OPTICAL CO.
626 St. Paul St., Rochester 2, N. Y.



List price is $7.50

New design of the lens in this 10X illuminated magnifier positions a miniature lamp between a black diaphragm and the ground rear surface of the lens to illuminate an object and, at the same time, to prevent any direct light from reaching the user's eye. The lamp is powered by two miniature dry cells in the handle. The magnifier represents further development of the design previously described IEN-10162-52. It is particularly intended for detail inspection applications.

If you write maker identify as IEN - 13649

PUMP . . Pneumatic hydraulic design builds and sustains hydraulic pressure

Source: LEDEEN MFG. CO.
1602 S. San Pedro St., Los Angeles 15, Calif.

Ask for Bulletin 4000

Vertical assembly, as shown in the illustration, or horizontal design are included in the company's new line of pneumatic-hydraulic pumps. A centrally located double acting pneumatic cylinder operates a double end piston rod terminating in pistons that operate in two hydraulic cylinders. The assembly includes oil reservoirs, filters, oilers, regulators and gages, all assembled on a structural frame.

Connection is made to the pneumatic cylinder from a shop air line. Pressure ratio between the pneumatic and hydraulic cylinders ranges from 6 to 86 to 1. The pump can be employed in continuous reciprocating operation. It will hold at its maximum set pressure when fluid circulation on the hydraulic side is stopped.

Identify as IEN - 13650

You will save as much as 40 per cent of the cost of a new optical flat if you will send one that has become shop worn to Acme Scientific Company in Chicago for reconditioning. Scratches will be removed. Original transparency and accuracy will be restored.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13651

Stop CORROSION in your Steam System

WITH CORAVOL

When fed to your steam system, **CORAVOL:** (1) *prevents* corrosion in steam and condensate lines, (2) *cleans* rust clogging rust deposits resulting from previous corrosion. Thus, **CORAVOL** protects lines, increases the effectiveness of heat transfer surfaces, restores original capacity of lines and the operating efficiency of valves and traps.

CORAVOL is part of a complete technical service which provides special chemical formulas for: Boiler Feed Water . . . Foam Prevention . . . Hot Water Supply . . . Refrigerating Brine . . . Cooling and Condenser Water . . . Rapid Scale Removal . . . Coagulation . . . Algae Control.

Write TODAY to Western Chemical Company, 715 Washington Street, Kansas City, Missouri—for complete FREE data about the **CORAVOL** process.

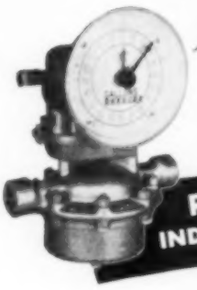
Western Chemical Co. is owner of U. S. Patent No. 2555024 covering the use of volatile amines in steam systems.

WESTERN CHEMICAL CO.

715 WASHINGTON KANSAS CITY, MO.

If you write maker identify as IEN - 13652

THERE'S *Safety* IN THESE NUMBERS



Stop Losses
Control Costs
Guard Formulas

ROCKWELL INDUSTRIAL METERS

Let Rockwell industrial meters "police" for your accountants and production supervisors every liquid movement within your plant. You can install these lastingly accurate guardians with profit when batch mixing formulas, for inventory records, for cost identification. A size and type meter for every need. Measure practically every liquid. Write for bulletin.

ROCKWELL MANUFACTURING COMPANY
Dept. B6, 400 N. Lexington Ave., Pittsburgh 8, Pa.

If you write maker identify as IEN - 13653

TEMPERATURE CONTROL

Five Ranges of 150, 350, 450, 650 and 1000 deg. F.
Thermostatic element operates electric switch.
Switch capacity to 500 watts ac. 50 watts dc.

This Model M Indicating Temperature Control is installed to operate a solenoid or motor valve in a gas, oil or steam line and thus regulate flow in step with heat requirements. It is employed to control the operation of electric heating elements, relays, motors. It automatically maintains temperature (where you set the red-colored pointer on its temperature-indicating scale) in an oven, melting pot, platen, drier, or any heated equipment.

This electric control is available in two and three-wire designs for ac. and dc. control circuits. The thermostatic element is our mercury-actuated flexible unit, powerful, positive, accurate. All elements are changeable. List prices of the complete control range from $62 to $74.

Send for Bulletin 505-C for detailed information

THE PARTLOW CORPORATION

4 Campion Road New Hartford, N. Y.

If you write maker identify as IEN - 13654

HOW ANOTHER COMPANY

SAVES WITH U.S.I.

SOUND POWERED TELEPHONES

TRANSWORLD AIRLINES, Inc. solved their problem of faster and surer checking of pressurization equipment... One mechanic in the plane, the other outside the plane communicate instructions with accuracy . . . Their equipment is fully portable...without batteries, of course.

UNITED STATES INSTRUMENT CORPORATION
SUMMIT • • • NEW JERSEY

If you write maker identify as IEN - 13655

Now BERYLLIUM COPPER STRIP

. . . rolled to *precision tolerances* and to *ultra-thin gauges*

WE CAN MEET your requirements for one pound—or for thousands. We can meet them in a hurry, too—because we keep a working inventory of beryllium copper that insures delivery within two to four weeks.

WE REGULARLY custom-roll beryllium strip up to 6" wide and down to .0005" thin—to tolerances as close as ±.0001"—solution annealed or rolled to temper.

WE'RE SPECIALISTS in cold-rolling a wide variety of metals—to your specifications . . . in any quantity. It's everyday work for us to roll strip to exacting specifications—the "tough ones" that commercial mills ordinarily refuse to produce.

WE ALSO CUSTOM-ROLL Invar • Phosphor Bronze • Copper • Brass • Nickel-Silver • Stainless Steels • Nickel • Monel • Haynes Stellite Alloys • Magnetic Alloys • Chrome Iron Alloys . . . and many others.

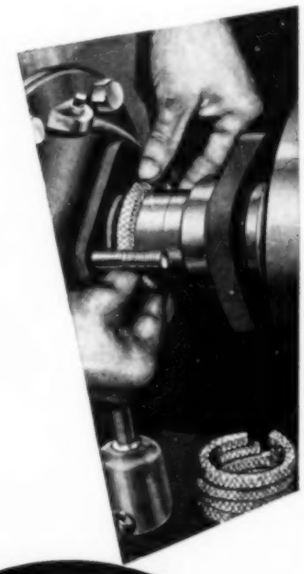
WE CARRY A WORKING INVENTORY of some metals . . . and also roll your metals on a toll basis. Our up-to-the-minute equipment includes precision 2-High, 4-High, and Sendzimir rolling mills . . . precision gang slitters . . . and continuous atmosphere annealers.

OUR ENGINEERING DEPARTMENT will be happy to assist you with your custom-rolling problems. Just write or call—and ask for our catalog.

INDUSTRIAL DIVISION
AMERICAN SILVER COMPANY, Inc.
36-03 PRINCE STREET, FLUSHING 54, N. Y.

Applying Science to Craftsmanship

If you write maker identify as IEN - 13656



IT'S PACKED WITH SATISFACTION WHEN IT'S PACKED WITH R/M

In high-pressure compressors like this, and under all kinds of difficult operating conditions, Raybestos-Manhattan Packings and Gaskets will give long, trouble-free service. R/M Packings are made for high pressures, high temperatures, and extreme low temperatures, as well as for service against caustics, acids, gas, water, steam, petroleum and other commercial fluids. Your R/M distributor can help you select the right packings for your plant. Call him today.

FOR R/M "TEFLON" PACKINGS, GASKETS, SHEETS, RODS, TUBES, SEE YOUR R/M DISTRIBUTOR

R/M PACKINGS

RAYBESTOS-MANHATTAN, INC.
PACKING DIVISION, MANHEIM, PA.

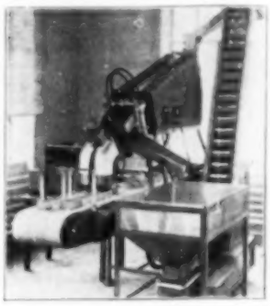
FACTORIES: Bridgeport, Conn., Manheim, Pa., No. Charleston, S.C., Crawfordsville, Ind., Passaic, N.J., Peterborough, Ontario, Canada

RAYBESTOS-MANHATTAN, INC., Manufacturers of Packings • Asbestos Textiles • Industrial Rubber Products • Abrasive and Diamond Wheels Rubber Covered Equipment • Brake Linings • Brake Blocks • Clutch Facings Fan Belts • Radiator Hose • Sintered Metal Products • Bowling Balls

If you write maker identify as IEN - 13658

PACKAGING . . Counting machine feeds small parts into containers

Source: U. S. ENGINEERING CO.
40-26 22nd St., Long Island City 1, N. Y.



Fast and accurate

A belt conveyor, electronically controlled, has been added to the company's Count-O-Matic Model-E packaging machine, previously described IEN-11823-51. Containers that receive the counted work pieces ride on this conveyor. It holds them in receiving position and releases them upon the instant that the predetermined count has been reached. Then they travel toward the rear to be taken off for storage or shipping depending on the application.

Any total to a maximum of 1,000 can be set on the Potter predetermining electronic counter which controls the operation. Small parts, such as nuts for No. 8 screws, were previously handled at about 2,000 a minute. Now they can be counted into the containers at the rate of 5,000 a min. with negligible error.

Items to be handled into containers are filled into a hopper shown to the right in the illustration. This hopper delivers through a Syntron vibrating feeder to the bucket elevator conveyor which delivers to an elevated Syntron feeder that forwards the work pieces to a pair of inclined parallel rolls. These rolls are driven by a small motor with variable speed control so both move upward with reference to the center line.

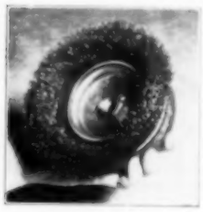
The action assists in aligning the work pieces and feeding them forward to the counting chute. Parts that are improperly delivered are discharged by rolls and air jets. Dirt drops out between the rolls. Correctly fed pieces align themselves in a single-file continuous stream that delivers to an electronically controlled gate above the parallel delivery spouts.

The gate switches from one side to the other to cut off delivery through one spout and immediately start it through the other each time the predetermined total is reached.

If you write maker identify as IEN - 13659

BRUSH . . Wire cup design, replaceable filler, 5½ in. diameter

Source: HEWITT-ROBINS INC.
238-42 Kensington Ave., Buffalo 5, N. Y.



Hub is permanent

Paint, rust, scale, slag are removed from metal surfaces with this new wire brush and a portable pneumatic or electric tool. The brush consists of inner and outer metal adapters and a replaceable wire cup filler employing wire bristles anchored in rubber. Wire gage ranges from 0.014 to 0.028 inch. Spindle bores are ½ and ⅝ inch. The hub will take a special bore to 1½ inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13660

AGASTAT
TIME DELAY RELAY

Small – Compact – Few moving parts
Easily mounted – Operates in any position
Time delay range,
1 second to 5 or more minutes

A'G'A DIVISION OF ELASTIC STOP NUT CORPORATION OF AMERICA
1027 NEWARK AVENUE • ELIZABETH 3 • NEW JERSEY

If you write maker identify as IEN - 13661

Lifts, Carries and Places

Any Size, Shape or Weight

KRANE CAR, built by Silent Hoist & Crane Company, picks up a load of any shape or size, up to ten tons, transports it and spots it accurately, smoothly and safely. ROCKFORD CLUTCHES control the power transmission from its one-man-operated single engine. Let ROCKFORD clutch engineers help with your power control problems.

B-W ENGINEERING MAKES IT WORK
B-W PRODUCTION MAKES IT AVAILABLE
ENGINEERING BULLETIN SENT ON REQUEST

ROCKFORD CLUTCH DIVISION
303 Catherine Street, Rockford, Illinois, U. S. A.

ROCKFORD CLUTCHES

If you write maker identify as IEN - 13662

Delpark FULL-FLOWING SELF CLEANING
COOLANT FILTERS
FOR SOLUBLE OILS and CUTTING OILS

A gravity filter, complete and continuous filtration of the coolant removes heat-bearing solids as it comes from the work. More uniform limits, better finish, and greater accuracy are maintained with a clean wheel and lower coolant temperature.

Compare these points with your present coolant system:

- **Keeps wheel clean for faster, more accurate cutting and longer life.**
- **Less wheel dressing required.**
- **Uniform coolant temperature.**
- **Limits more easily maintained.**
- **Extended coolant life.**
- **No down time for de-sludging reservoir.**
- **Less wear on coolant system.**

These are but a few of the many advantages offered by Delpark Full-Flowing, Self Cleaning Coolant Filters. For more complete information:

Delpark
INDUSTRIAL FILTRATION
Backed by 30 Years Experience in Industrial Filtration

INDUSTRIAL FILTRATION COMPANY
517 Industrial Avenue • Lebanon, Indiana

If you write maker identify as IEN - 13663

Speed movement of goods, save personnel time with safe, push-button operated Whiting Cross-Over Bridges. Three types to serve terminal needs: Overhead-Rise, Roll-Away or Ground-Level (as pictured) for faster truck movement across tracks. Ruggedly built for lasting service and low maintenance! Write for Bulletin MS-C-400.

WHITING CORPORATION
15629 Lathrop Avenue, Harvey, Illinois

WHITING CROSS-OVER Bridges

If you write maker identify as IEN - 13664

Hundreds of PROFITABLE USES for–

Use these versatile flexible shaft tools for all kinds of shop work including die sinking, polishing, reaming, grinding and similar jobs. They're quickly and easily coupled to any electric motor with 1/8" or 1/2" diameter spindles.

They come in two sizes. The 700 Series for precise, delicate work use .092" shank diameter tools. The 500 Series for heavy duty service use tools with shank diameters up to 1/4".

WRITE FOR THIS CATALOG. CATALOG T-51 describes Flexarms and many other S. S. White tools for industry. Send for your copy today.

THE S.S.White INDUSTRIAL DIVISION
DENTAL MFG. CO. Dept. N, 10 East 40th St. NEW YORK 16, N. Y.
WESTERN DISTRICT OFFICE: Times Bldg., Long Beach, Calif.

If you write maker identify as IEN - 13665

JOY WL-80 "UNITAIR"

the Compressor of 1000 uses

81 to 640 CFM

- A size for every standard motor rating
- Air cooled . . . Two stage
- Force-feed lubrication
- Small floor-space requirements

Write for this FREE HELP!

New 16-page Bulletin A-56—has complete details and a Selector Chart to help you choose the right compressor for your needs.

Consult a Joy Engineer W&O 15087

JOY MANUFACTURING CO.
General Offices: Henry W. Oliver Building
Pittsburgh 22, Pa.
IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED
GALT, ONTARIO

If you write maker identify as IEN - 13666

with **AURAND CLEANING TOOLS**

Clean off accumulations of scale, paint, rust or any foreign matter from any hard surface with Aurand Cleaning Tools. Toothed cutting wheels, loose pinioned on rotating head chip away accumulations at high speed. Positive depth shoe prevents cutting into permanent surface and assures uniform cleaning of entire area.

Two sizes in electric or pneumatic models.

FOR FULL DETAILS, WRITE DEPT. 649

AURAND MFG. & EQUIP. CO.
2643 Coleman Avenue • CINCINNATI, OHIO

If you write maker identify as IEN - 13667

PROTECTING . . Transparent tarpaulin made of plastic, light, inexpensive

Source: CANTON CONTAINERS INC.
1103 Ninth St. S. E., Canton 2, Ohio

About $4 to $24

Transparent polyethylene plastic is employed in this new C-Line tarpaulin. It provides water proof and mildew proof protection. It remains pliable at any temperature. It is tough and tear resistant but can be readily washed and dried. It will not absorb paint or liquids. The transparency characteristic permits viewing through it the objects that have been stored beneath it.

Sizes range from 6 by 10½ ft. to 16 by 24 feet. A 6 by 16-ft. unit weighs a little under 2 lb., while a 16 by 24-ft. unit weighs about 7 pounds. Plain or grommeted construction can be specified. Grommets are located on about 3-ft. centers.

If you write maker identify as IEN - 13668

GAGE . . Vibrating reed instrument reads amplitude, frequency, direction

Source: MARTIN ENGINEERING CO.
704 Roslen St., Kewanee 2, Ill.

Checks vibrator action

Vibra-Tak is a new pencil shaped gage to measure vibration, as in the pattern plate shown in the illustration to which one of the company's Vibrolator pneumatic vibrators is shown attached. The gage mounts a wire reed and is equipped with a moving slide by which the effective reed length is adjusted in making a determination.

A reading is set, with the gage in contact with the work as shown, by moving the slide until maximum amplitude is reached at the reed end. The scale at this point is multiplied by 1,000 to obtain the reading in a range between 2,000 and 15,000 cpm. Amplitude is in direct proportion to frequency. Direction is indicated by the plane in which the reed vibrates.

Identify as IEN - 13669

Tag Manufacturers Association, New York City, presents the possibilities of tags in various forms as a means to assist in production control and to hold production costs down. The Association is prepared to direct you to its members who will assist in laying out the control plan for your plant and can supply the required tags.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13670

WRITE YOUR OWN TICKET FOR Quality Wire!

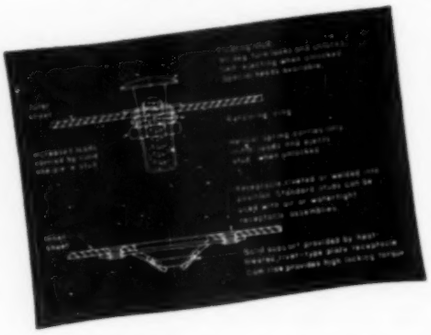
SPECIFY **SENECA** FOR WIDE RANGE OF USES

- Aircraft
- Armature
- Cable
- Car Seal
- Cotter Pin
- Curtain Spring
- Flexible Shaft
- Glass Netting
- Hair Pin
- Lock Spring
- Piston Ring
- Plow Steel
- Ring Traveler
- Rope
- Spark Coil Core
- Spring
- Stapling
- Stitching
- Weaving

Whatever your needs in wire . . . specify SENECA for *top quality* and *uniformity!* High or low carbon steel wire . . . aluminum . . . bronze. Sizes No. 40 W & M (.007) and larger . . . round, half round, oval, square, flat, straightened and cut. Finishes—bright, soft annealed, coppered, liquor, tinned, bright galvanized, oil tempered, enameled. Write about your requirements.

SENECA WIRE & MANUFACTURING COMPANY, FOSTORIA, OHIO
Representatives in practically All Principal Cities

If you write maker identify as IEN - 13671



HOW QUICK-LOCK CUTS FASTENING COSTS

QUICK-LOCK speeds up the mounting and demounting of detachable panels, works equally well on curved or straight sheets. It is adaptable to many different fastening applications in the aircraft, automotive, railroad, electrical and appliance fields. Write for literature and samples today.

SIMMONS FASTENER CORPORATION, 1758 No. Broadway, Albany 1, New York

Simmons | QUICK-LOCK SPRING-LOCK ROTO-LOCK LINK-LOCK

FASTENERS THAT IMPROVE PRODUCTS AND REDUCE ASSEMBLY COSTS

If you write maker identify as IEN - 13672

FOR VENTILATION FUME AND DUST CONTROL AIR CONDITIONING

FLEXAUST

SPIRAL-REINFORCED HOSE LIGHT, STRONG AND VERY FLEXIBLE

Flexaust is of proved suitability for a wide variety of suction and pressure uses in ventilation, fume and dust control, air conditioning.

EXTREMELY EASY TO INSTALL—EFFICIENT AND ECONOMICAL IN USE

SIZES: 1¼" to 28" dia.
Various Flexaust types, accessories, and other hose types also available:

BLOFLEX
Non-reinforced
Collapsible hose

PORTVENT
Ring-reinforced
retractable hose

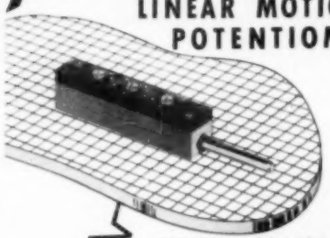
Write for full descriptive data and prices

AMERICAN VENTILATING HOSE CO.
Dept. 1E-12, 100 Park Ave., New York 17, N. Y.
Plant: Amesbury, Mass.

If you write maker identify as IEN - 13673

BOURNS

LINEAR MOTION POTENTIOMETERS



BOURNS precision wire-wound potentiometers accurately translate mechanical position into an electrical signal. Resolution of .001 inch attainable in all standard ranges from 1 to 6 inches. Technical publication describing standard models and special applications available upon request. BOURNS designs and manufactures other potentiometer instruments which measure such physical variables as gage pressure, differential pressure, altitude and acceleration.

BOURNS LABORATORIES
6135 MAGNOLIA AVENUE • RIVERSIDE, CALIFORNIA

If you write maker identify as IEN - 13674

BLUE RIBBON RESISTORS

Our Blue Ribbon Resistor—designed in 1939—was the *first* flat or strip resistor in the field. And now, though there are others of similar type, our Blue Ribbon still holds first place—and *is still winning "blue ribbons,"* and such comments as quoted above.

Our crazeless gray enamel eliminates the disastrous crazing which results in failure of the resistive element.

The aluminum thru-bar distributes the heat more uniformly along its entire length—than conventional tubular resistors.

The studs are peened to serve as mounting supports and also to permit the stacking of units to save space.

As compared to the conventional tubular resistor Blue Ribbons give you:

1. Higher wattage rating per unit space requirement. 2. Reduction in space behind the panel or mounting surface. 3. Sturdy but simple mounting, either single or stacked. 4. Lighter weight. 5. Lower induction.

Our Blue Ribbons are designed for and manufactured in accordance with JAN-R-26A specifications.

HARDWICK, HINDLE, INC. Rheostats and Resistors

Subsidiary of

THE NATIONAL LOCK WASHER COMPANY

Established 1896 NEWARK 5, N. J., U.S.A.

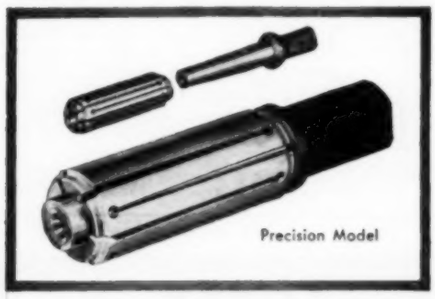
the mark of quality for more than half a century

If you write maker identify as IEN - 13675

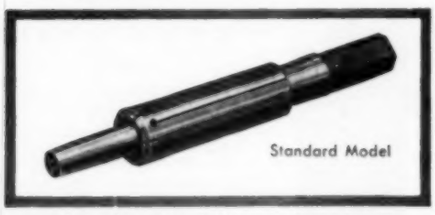
CHAMPION E-X-P-A-N-D-I-N-G MANDRELS

work savers—cost cutters job speeders—in any shop

Save the time spent tooling up solid mandrels. CHAMPION mandrels automatically expand to exact, positive, concentric fit as the flexible sleeve is moved along the tapered arbor. Work is quickly set up; easily taken down. Your production costs are cut, whether the job calls for machining only one piece or ten thousand pieces.



Precision Model positively guaranteed for precision grinding, turning and milling operations. Ideal where accuracy and time-saving are of utmost importance. Available in standard sizes from 1/2" through 3" diameter, graduated by 1/16". Arbor built for heavy loads. Sleeve has range of .010", from .003" under to .007" over nominal size. Positive stop at maximum size prevents overstrain. Holds tolerances of .0002" run out. Withstands hardest wear; permanent accuracy is assured.



Standard Model used throughout the world. Standard tool room equipment in all phases of modern industry. A set of twelve will completely and accurately fill any hole from 1/2" to 7" diameter—replace hundreds of solid mandrels costing many times as much. Show negligible wear after years of use. Maintain close tolerances; handle material of any length bore, hard or soft metals, from thin tubes and bushings to heavy castings and forgings.

CHAMPION Expanding Mandrels can be made in special shapes and sizes to fit any specification. Quotations on request.

When writing, please address Dept. 200.

WESTERN TOOL & MFG. CO., INC.
SPRINGFIELD, OHIO

If you write maker identify as IEN - 13677

COMMUNICATING . . Tape recorder and playback with pushbutton controls

Source: ALLIED RADIO CORP.
831-35 W. Jackson Blvd., Chicago 7, Ill.

About $100

Two speeds and a dual track recording head are selected at push buttons on the front of this new Knight tape recorder. The 1,200-ft. reel records for two hours on two tracks at 3¾ ips. The time is cut in half when the speed is set at 7½ ips. Frequency response is flat from 70 to 8,500 cps. at high speed and at 80 to 6,000 cps. at the low speed.

Recordings can be made from the microphone, supplied as part of the standard equipment, or from a radio, fm. tuner or phonograph. Playback is through the built-in amplifier and a 5 by 7-in. oval speaker. Weight is 22 pounds. Overall dimensions are 14 by 12 by 7 inches. Operation is on 110-volt 60-cycle ac.

If you write maker identify as IEN - 13678

PROTECTING . . Leather glove impregnated for resistance to heat

Source: MINE SAFETY APPLIANCES CO.
21 Braddock Ave., Pittsburgh 8, Pa.

To handle hot work

Liberty Heat is a new glove made of soft, flexible leather impregnated with insulating and refractory materials and equipped with an inner lining sewn into the finger tips. The glove is available in two constructions for service in temperatures to 500 and to 800 deg. F. The line includes a reversible mitt that can be worn on either hand.

If you write maker identify as IEN - 13679

HEATING . . Electric space unit, motor driven fan, 20 kw. rating

Source: EDWIN L. WIEGAND CO.
7505 Thomas Blvd., Pittsburgh 8, Pa.

Assists central heat

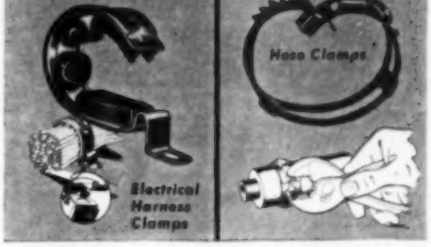
New size, with 20-kw. rating, has been added to the company's Chromalox UB unit heaters. The line now covers a range from 2 to 20 kw. The new unit operates on 220 or 440-volt single or three-phase ac. to specification. Overall dimensions are 17 by 21 by 21 inches. Weight is 79 pounds.

Construction includes a sheet metal housing, Koilfin strip elements sheathed in steel, adjustable aluminum louvers and a thermal cutout to guard against overheating. Mounting can be made on the floor, wall or under a ceiling. Wall mounting is shown.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13680

Speed Clamps . . cut costs, step-up both Military and Civilian Production!



Can be opened or closed by hand, no tools needed. Attach to structure or pre-assemble to harness prior to installation. T-shaped tongue and slot prevent accidental opening.

Assembles to pre-latched position by hand, to lock compress with standard pliers held parallel to hose in tight locations. Easily removed, it can be reused indefinitely.

These SPEED NUTS Brand Fasteners are engineered to reduce production costs, eliminate assembly operations, cut materials handling and do a better fastening job! Developed for military aircraft, they now save production costs for many product lines. Your Tinnerman representative can help determine the right fastener for your fastening problem—call him or write direct to:

TINNERMAN PRODUCTS, INC.
Dept. 12, Box 6688, Cleveland 1, Ohio

If you write maker identify as IEN - 13681

YOU CAN'T STALL THIS DRILL IN HARDEST STEEL!

IT'S A Thor

Over 36 sizes and speeds from little pistol grip models to heavy duty reversing machines.

If you're tired of "babying" your electric drill, switch to a heavy duty Thor. When minutes mean dollars, do what the smart operators do—use GOOD tools!

use Good tools Thor

PORTABLE POWER TOOLS

INDEPENDENT PNEUMATIC TOOL CO.
AURORA, ILLINOIS

If you write maker identify as IEN - 13682

CUTS METAL FAST AND ACCURATELY

Whether you shear 26 gauge or one inch thick metal, you want smooth, straight, burrless cuts. Resulting pieces must be accurate within close tolerances.

In addition, you want a machine that performs for long periods without need of adjustment and maintenance. It must be easy to operate and be provided with ample safety features. Knives must stay sharp after thousands of cuts.

No machine meets these requirements better than a Steelweld Shear. We urge you to get the facts.

STEELWELD Pivoted Blade SHEARS CATALOG No. 2011

Send for free copy of catalog No. 2011.

THE CLEVELAND CRANE & ENGINEERING CO.
4233 East 282nd St., Wickliffe, O.

STEELWELD SHEARS

If you write maker identify as IEN - 13683

FOR MORE CUTS PER DAY MORE CUTS PER BLADE

Specify Starrett

HACKSAWS

A complete line for all hand or power metal cutting

BAND SAWS
STARRETT

For cutting metal, wood, plastics, in coils or cut to length and welded

BAND KNIVES
FAST-KUT

For all soft or fibrous materials. Straight, scallop or wavy-edge types

HOW TO CUT CUTTING COSTS

Big new catalog tells how to choose the right hacksaw, band saw or band knife for any cutting job. Write for it today. Address Dept. N.

Starrett

THE L. S. STARRETT COMPANY
Athol, Massachusetts, U.S.A.

If you write maker identify as IEN - 13684

"Any Way You Figure"

Up to 50% Faster Baking

Despatch OVENS

There's a Despatch Finish Baking Oven to meet the needs of both large factories and small shops. Wide range of uses includes aging, preheating, drying and curing. Ideal for baking insulating varnish on armatures . . . film surfaces of lacquer and enamel . . . wrinkle finishes on metal parts . . . hundreds of other baking operations. 12 to 240 cu. ft. capacities.

- Fast finish baking of mass production parts, or for repair service . . .
- Vertical and horizontal forced air circulation prevents over or under baking . . .
- Gas or electric operated . . . wide range of sizes . . . factory tested . . . shipped assembled . . . ready for operation.

Write for Bulletins on RS Ovens and Trucks

Manufacturers of ovens . . . for paint finishing . . . dehydrating, curing . . . all industrial and laboratory applications.

DESPATCH OVEN CO. Established in 1907

337 DESPATCH BUILDING
MINNEAPOLIS 14, MINNESOTA

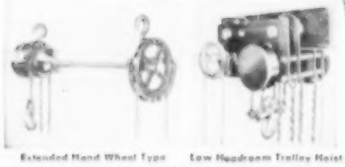
If you write maker identify as IEN - 13685

NEED "Special" CHAIN HOISTS ? Call on CHESTER

In addition to a complete line of Spur-Geared and Differential Chain Hoists, Chester is in a position to move fast on orders for special types.

For example, we can furnish Low Headroom Trolley Hoists for buildings where no other type of hoist can be used. We can also adapt our standard Spur-Geared Hoists to the Extended Hand Wheel Type—ideal for handling hot materials from a safe distance, for moving work whose surface must be protected against scratching by the hand chain, or for large flat or bulky loads.

Why not ask your distributor, or write us today, for the Chester catalog, and tell us your "special" problems?



Extended Hand Wheel Type — Low Headroom Trolley Hoist

CHESTER HOIST DIVISION
The National Screw & Mfg. Co.
Lisbon, Ohio

If you write maker identify as IEN - 13686

S-W Belt Saver Pulleys

SINCE 1866

. . . Protect Expensive Belts

For rough service installations . . . for the handling of hard, abrasive materials—always specify the S-W 'BELT-SAVER'.

Its special wing and cone design and its self-cleaning action assure longer belt-life and reduced maintenance costs.

The 'BELT-SAVER' pulley is exclusive with Sprout-Waldron, along with a complete line of standard and special cast iron pulleys.

Write for Bulletin 35-A today! Sprout-Waldron & Co., 5 Logan St., Muncy, Pa.

Vertical Mixers, Attrition Mills, Rotary Feeders, Ribbon Type Mixers, Crushers, Knife Cutters, Continuous Mixers, Roller Mills, Separators, Pulleys

SPROUT-WALDRON

If you write maker identify as IEN - 13687

PRINTING . . Photocopy equipment exposes, develops, dries and delivers

Source: AMERICAN PHOTOCOPY EQUIPMENT CO. 2852 N. Clark St., Chicago 14, Ill.

Booklet details it

Apeco Auto-Stat Systematic 1 is a new single unit combination of the company's separate exposing and developing equipment previously described IEN-1989-52. One operator can produce 100 or more copies per hour from transparent or opaque originals that have been written, drawn or printed on one or both sides of the original sheet. The machine will take sheets to 11 by 17 inches. It measures about 21 by 10 by 11 inches.

The original and a No. 1 sheet of light sensitive coated paper are inserted together through the exposure slot to feed through in about 10 seconds. The exposed sheet is then faced to the No. 2 coated non-sensitive paper and the two are fed through a second slot to pass through the developing solution and then through a pair of motor driven feed and drying rolls for delivery. The No. 2 sheet is peeled from No. 1 and the latter can be saved or discarded. The No. 2 sheet is an exact reproduction of the original and is ready to use.

If you write maker identify as IEN - 13688

PRINTING . . Holder dispenser protects sensitized photocopy paper

Source: AMERICAN PHOTOCOPY EQUIPMENT CO. 2852 N. Clark St., Chicago 14, Ill.

Lever operated

Apeco Ejecto is a new protecting and dispensing unit to hold the two emulsion coated papers employed in the company's Auto-Stat photocopy equipment, described IEN-13687, this issue. The No. 1 light sensitive paper is held in the main housing and is delivered through a slot, one sheet at a time, when a lever is operated. The No. 2 coated paper, which is not sensitive to light, is held in a shelf in the base. The new unit will take 100 sheets of each to 8½ by 11 inches.

If you write maker identify as IEN - 13689

Chrysler's new 52 page illustrated booklet for its employees, "Chrysler Corporation and You", makes a striking example of the changes that have been made since, only a few years ago, a plant was a place just to work. Educational facilities, hospitals, pensions, insurance, plant protection, agreements with unions, plant tours, savings bonds, vacations, personnel services, recreation and your importance to the company when you are off the job all make up today's picture. Such a booklet does a first class job for the company as well as the worker.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . . Descriptions . . . Ratings . . . See Page 50

If you write maker identify as IEN - 13690

Red Devil the FIRST and LAST WORD in Floor Conditioning

Red Devil—the first complete line of modern floor maintenance machines—the last word in dependable, low-cost floor conditioning. Red Devil offers large and small machines for scrubbing, waxing, polishing and steel-wool cleaning office and factory floors of wood, linoleum or concrete. Each Red Devil Floor Conditioner is the best obtainable at its price.

FP-33 Versatile, easy to use, and inexpensive. 19 lbs. Two 6" brushes. 110 V. AC-DC.

FP-1 Heavy-duty floor maintenance. Scrubs, waxes, polishes, steel brushes. 210 RPM. 56 lbs. 110 V. AC (DC extra). Also available—the FP-2 with 13" spread.

FP-11 Fast, compact, light, multi-purpose 300 RPM. 33 lbs. Converts to hand polisher. 11" brush. 110 V. AC-DC.

FP-3 4-in-1 floor conditioner. Reconditions, waxes, polishes, scrubs. 180 RPM. 110 lbs. 17" brush spread. 110 V. AC.

Write for RED DEVIL Catalog 21M

Products of Red Devil Tools. 129 COLT ST. IRVINGTON 11, N. J. U. S. A.

If you write maker identify as IEN - 13691

BENEFIT 3 WAYS

by putting machinery on vibration absorbing

ISOMODE® PADS

1. EASIER, FASTER MACHINE INSTALLATION Isomode Pads work on any type of flooring. No need to bolt to or damage floor. Simply cut the required area of Pad and place under base or legs of equipment.

2. QUIETER PLANT . . . Absorbing impact and vibration—even that of high capacity punch presses—Isomode Pads can help you reduce noise levels, increase comfort.

3. LESS MACHINE MAINTENANCE . . . There's less stress and strain on machines when they're flexibly mounted. You thereby save maintenance time and labor, help equipment last longer.

Made of DuPont Neoprene, the Pads resist oil, water, aging. Get more details.

THE MB MANUFACTURING COMPANY, INC.
1064 State Street, New Haven 11, Conn.

If you write maker identify as IEN - 13692

TROUBLE-FREE CARBON SEAL RINGS FOR MECHANICAL *Shaft Seals*

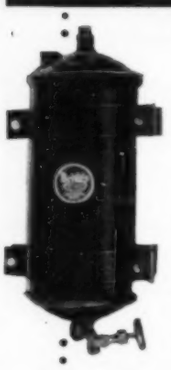
In addition to many standard types, recent developments in Stackpole carbon-graphite shaft seal rings include grades that are highly effective in the presence of acids and other corrosive chemicals. As long time specialists in this field, Stackpole offers unsurpassed facilities for engineering suitable grades for practically any application. Write for recommendations, sending details of your problem.

STACKPOLE

STACKPOLE CARBON CO., St. Marys, Pa.

If you write maker identify as IEN - 13693

FACTS . . . you ought to know



about . . . **DRY CONDITIONED AIR**

NOW AVAILABLE AT NO OBLIGATION!

Write TODAY for your copy of actual reports that tell how to step up production with DRY CONDITIONED AIR.

Maintenance engineers' reports have been compiled on many installations in a variety of industries which will help you eliminate frozen and clogged valves, clutches, air lines and mechanical equipment.

Discover for yourself how Briggs "Dry Conditioned Air" will step up production with air-powered drills, brakes, welders, screwdrivers, etc.

Ask for "Filter Facts"—write TODAY!

Briggs PIONEERS IN MODERN AIR FILTRATION

THE BRIGGS FILTRATION COMPANY
RIVER ROAD, WASHINGTON 16, D. C.

FOR MORE THAN A QUARTER CENTURY

If you write maker identify as IEN - 13694

free booklet!

for product designers tells how you can use MASONITE PRESDWOOD

Here's the answer to many of your design problems. Tells you how to improve the design of old products . . . gives you idea starters for new products . . . by incorporating Masonite Presdwood.®

These strong, durable, grainless all-wood hardboard panels have 28 distinct advantages—now used in furniture, toys, autos, trains, hundreds of other items. Easy to fabricate. Take beautiful finishes. 59 types and thicknesses to choose from.

Get the whole story in this 24-page illustrated booklet. *Write today!*

BETTER HARDBOARDS FOR BETTER PRODUCTS

MASONITE® CORPORATION
DEPT. IEN-13, BOX 777, CHICAGO 90, ILL.

"Masonite" signifies that Masonite Corporation is the source of the product

If you write maker identify as IEN - 13695

FOR SAFETY *Interlock!*

PROTECT MEN AND EQUIPMENT AGAINST "MENTAL LAPSE".

Operator is shown entering compartment which is interlocked with protective equipment. Diagram shows key interchange scheme.

KIRK KEY INTERLOCK *System*

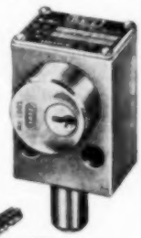
Provides a predetermined sequence of operation . . . and prevents "mental lapse" which might cause damage to men and equipment.

A Typical application is shown above. "A" is interlocked with "B" to prevent opening of door "A" when switch (locked by "B") is closed and in service. Only when protective switch (with "B" interlock) is opened, and locked open with a Kirk Key can the same key be released to unlock "A" (on door).

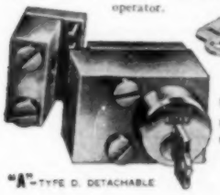
This makes sure that circuits in compartment with "A" interlock are dead and safe to approach. The main switch locked by "B" cannot be reclosed until "A" is locked closed, making the same key available to unlock "B", and thus allow the switch to be closed in again.

The key can now be removed from "B", indicating that the circuits are energized.

When removed, the key is usually kept on a rack and used only by an authorized operator.



"B"-TYPE F FLAT MOUNTING



"A"-TYPE D. DETACHABLE

Unlimited interlocking schemes may be arranged from many types of Kirk Key Interlocks

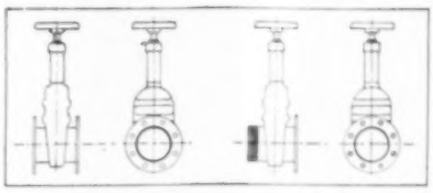
Write for Bulletin 1700 for many more details.

R&IE EQUIPMENT DIVISION
I-T-E CIRCUIT BREAKER CO.
GREENSBURG, PA.

If you write maker identify as IEN - 13897

VALVE . . Pressed steel, gate type, with flanges and with hose nipple

Source: ALLEGHENY VALVE CO.
346-50 Pennsylvania Ave., Warren, Pa.



List is about $30 for 3 in. size

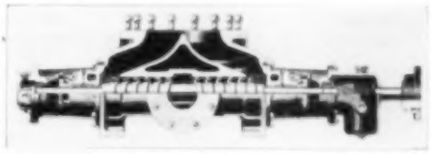
Pressed steel in welded assembly is employed for the body, connections and flanges in this new valve to provide a light weight unit with adequate strength for liquid transfer service. Two designs include flanges on the two faces or a flange on one face and a hose nipple on the other. Two sizes are 3 and 4 inch. Special flanges can be ordered.

Seats are welded in position and are made of 18-8 stainless steel. The stem carries right and left hand threads and is made of brass bar. The stem moves in its threads in the bonnet and at the same time the bronze gate moves on the stem due to the right and left hand construction. The stuffing box takes three packing rings with a brass gland. The packing is tightened by turning a pressed steel cadmium plated nut. The hand wheel is made of cast aluminum and is secured by a nut and lockwasher.

If you write maker identify as IEN - 13698

PUMP . . Balanced screw design to handle liquids and semi-liquids

Source: WARREN STEAM PUMP CO.
50 Warren St., Warren, Mass.



Illustrated data in Bulletin S-204

The company announces takeover of the Quimby line of balanced screw pumps of which the hopper type design shown in the illustration is typical. Parallel screws are meshed in intersecting parallel bores in the housing. Inlet passages are provided to the ends with a common outlet at the center. Packing, bearings, and the pair of gears to keep the screws operating together, are located at the housing ends.

Acetate, dope, tar, soap, sludge, chewing gum, tooth paste, food products are typical liquids and semi-liquids that can be pumped smoothly and steadily. The double action from both ends to the center provides hydraulic balance and puts the packings under suction pressure only.

Four basic sizes have 6 to 14-in. intake and 2 to 6-in. discharge. Input rates 3 to 60 hp. at 1,150 rpm. for pressure to 200 lb. and capacity to 3,000 gpm. depending on viscosity.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13699

Towsley

INDUSTRIAL FLOOR TRUCKS

for Every Materials Handling Purpose

No. 421. The "50 Line" for department, food stores, supply houses, hotels.

No. 480. "Selector" Truck may be equipped with variety of upper trays, shelves for special application.

No. 509. All steel "All-Welded" general purpose, push handle both ends, adjustable shelves.

No. 791. Side dump with automatic couplers fore and aft for pulling in train.

No. 384. The "200 Line" level top general purpose truck — "All-Welded" steel frame—pipe push handles.

There's an economy-wise, manpower-wise way . . . with Towsley Trucks! If you have a specific handling problem requiring special purpose equipment, let "Towsley give you a lift." For details write for Bulletin No. 50.

No. 786. Trailer type box truck with running gear mounted for perfect trailing.

TOWSLEY TRUCKS, INC., 1756 Elmore St., Cincinnati 23, O

If you write maker identify as IEN - 13700

SILVER-PLATED FUSES

G.E. silver-plates these contact surfaces at no extra cost to you*

"You can't beat silver as a conductor of electricity. That's why General Electric's new renewable fuse with silver-plated contact surfaces appeals to me. Silver-plating helps keep the ferrule or blades on G-E renewable fuses from heating up as blades of ordinary fuses do because of copper oxidation. This means fewer replacements, fewer shutdowns for my company—fewer emergency calls for me."

You'll like these other features of G-E renewable fuses too

1. Simple three-piece construction of both knife-blade and ferrule types.
2. Newly designed links give accurate and consistent time-delay.
3. Ribbed cap on knife-blade sizes gives better grip than knurling. You can tell at a glance which end comes off.

For complete data, address Section D51-1242, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

*All ratings of renewable time-delay fuses only

You can put your confidence in . . .

GENERAL ELECTRIC

If you write maker identify as IEN - 13701

EMERGENCY HEAT ON WHEELS FOR INDUSTRY!

● You can avoid layoffs, speed work in cold areas, provide temporary heat for warehouses with Herman Nelson Portable Heaters. They also provide auxiliary heating for those extra cold days or during loading or unloading operations and for scores of other heating and drying jobs.

HERMAN NELSON DELUXE I

Capacity 280,000-450,000 BTU/hr. Completely automatic, including temperature control. Fresh air delivery 2,000-2,350 cfm. Oil fired, electric powered. Other models available—with gasoline or electric power—and capacities from 125,000 to 385,000 BTU/hr.

The only completely safe portable heater that uses flexible ducts to spot heat where most needed—and remember, only uncontaminated air heaters are absolutely safe!

Models as low as $360.00—total cost often saved during first season. For full information, write **Dept. 104**, Herman Nelson Division, American Air Filter Company, Inc., Moline, Illinois.

If you write maker identify as IEN - 13702

faster heat transfer for 50% of the cost

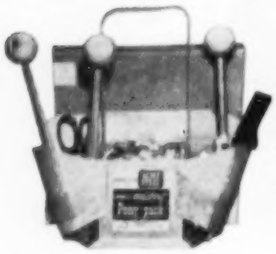
Stainless Steel Platecoils in a large variety of standard sizes or standard single embossed Platecoils rolled to specific diameters as shown above are finding increasing use in industry because they give five basic advantages in solving heat transfer problems. 1. Lower first cost. 2. Simplified and less costly installation. 3. Takes less space in tank. 4. Higher heat transfer rate. 5. No pipe joints in solution.

Send for complete technical manual and descriptive Bulletin No. P56.

PLATECOIL
KOLD-HOLD MFG. CO.
LANSING 4, MICHIGAN

If you write maker identify as IEN - 13703

Compact Steel Strapping Kit



New Acme Steel "Pony Pack" is lightweight, handy, complete with tools for fast, low-cost strapping.

Here's a handy, portable strapping outfit for work anywhere in your plant, warehouse, or yard . . . for fastening, re-coopering, securing, or reinforcing anything, anytime, anywhere.

It's Acme Steel's new "Pony Pack." It weighs about 20 pounds complete with metal carrier, 300-foot coil of Acme Steel strapping, a supply of seals, a stretching tool, sealing tool, and snips. For details, call the nearest Acme Steel office, or write Acme Steel Products Division, Department IEN-122.

ACME STEEL

ACME STEEL COMPANY
7840 Archer Avenue, Chicago 8, Illinois

If you write maker identify as IEN - 13704

Join plain-end pipe *permanently*. The quick, easy economical way is with a Dresser Style 38, using only a wrench. No exact pipe alignment necessary. Permanent, "flexible-tightness" prevents leaks from normal contraction, expansion stresses.

Available for sizes ⅜" ID through 72" OD steel pipe and cast iron pipe.

DRESSER
FLEXIBLE-TIGHT
COUPLINGS

Dresser Manufacturing Division, 59 Fisher Ave., Bradford, Pa. (One of the Dresser Industries). Warehouses: 1121 Rothwell St., Houston, Texas; 101 S. Barshore Highway, South San Francisco, California.

If you write maker identify as IEN - 13705

a Versatile Power Amplifier with HIGH OUTPUT — 3 FREQUENCY RANGES and EXCELLENT TRANSIENT RESPONSE

The superior performance of the audio and supersonic-frequency Type 1233-A Power Amplifier adapts it to a wide variety of uses in industrial plants, public address installations, electroacoustic research and electronic development laboratories.

This instrument features up to 15 watts output power — negligible overshoot when amplifying pulses with rise times as short as 0.1 μs — a noise level of less than 80 db below 15 watts — 150 or 600 ohms, balanced or grounded output — and an output volt-meter for indicating terminal voltage. Write for complete details.

Type 1233-A Power Amplifier . . . $525.00

GENERAL RADIO Company 275 Massachusetts Ave. Cambridge 39, Mass.
90 West St. NEW YORK 6 920 South Michigan Ave. CHICAGO 5
1000 North Seward St. LOS ANGELES 38

For Your Special Information

ALL MAKERS ARE LISTED IEN S-37

We are waiting for the final figures but we do know now that the 1953 edition of Thomas' Register will carry the advertising of more than 10,000 manufacturers, that the edition will be the largest in our history and a great deal larger as well as impressively more complete than any other source for the names and makers of the things you need in your plants and products.

No matter what comes up in the months ahead you will be able to find the makers of every material, tool, machine, supply or facility, if you have a copy of the three volume Thomas' Register beside you. We advise that you check to make certain your order is in. The issue will be sold out shortly as it has been for the past many years.

PLANT MAINTENANCE SHOW IEN S-38

Perhaps we will be seeing you in Cleveland in the week of January 19 to 22 when we attend the Fourth National Plant Maintenance Show. We are told that some 300 or more manufacturers will have their products on display. This compares with the 200 total last year. A conference paralleling the show will conduct some 60 separate sessions on every phase of the maintenance problem.

You can save yourself all waiting in the registration line by applying now to Clapp and Poliak Inc., 341 Madison Ave., New York 17, N. Y., for an advance registration card. No charge.

EXPOSITION IEN S-39

"Exposition of Basic Materials for Industry" titles a new show and conference to make its first appearance in New York City, at Grand Central Palace, June 15 to 19, 1953. Chairman of the Board of sponsors is Don G. Mitchell, President, Sylvania Electric Products Inc. The show and conference combined are aimed to offer a clearing house of ideas for new products and industrial methods to cut across all industry lines. The show will include new laboratory developments, new uses for old materials, new material forms and shapes. Mr. Mitchell describes it as a "new link in our industrial communications system".

Clapp and Poliak Inc., 341 Madison Ave., New York 17, N. Y. will conduct the show and conference. Detail information can be obtained there. Perhaps you will want to exhibit products of your own design, or enter into the conference activities, or just make arrangements to send a delegation to look and listen.

U. S. SAVINGS BONDS IEN S-40

Top Management:

YOUR BOOST IS NEEDED MOST

If you write maker identify as IEN - 13706

NEWCOMB-DETROIT

PIONEERS IN ENGINEERING, MANUFACTURING & INSTALLING OF

INDUSTRIAL OVENS
•
SPRAY BOOTHS
•
PARTS WASHERS
•
DUST COLLECTORS
•
HEAT and AIR SYSTEMS

ESTABLISHED 1912
• DETROIT DIVISION
• GRAND RAPIDS DIVISION
• NEWCOMB INDUSTRIES, LTD., WINDSOR DIVISION

For Bulletins and Quotations, Wire, Write or Call—
NEWCOMB-DETROIT
5757 Russell St., Detroit 11, Mich.
TR 3-2100

If you write maker identify as IEN - 13707

PORTABLE!
PRACTICAL!
PROFITABLE!

Union Special SUSPENDED HEAD
BAG CLOSING MACHINES

Portability, versatility, and simplicity of operation make Union Special Suspended Head Machines ideal for all-around bag closing operations in small plants, and well-suited for utility or stand-by duty in large plants. Users have found that machines can be used to produce neat, strong closures on virtually all types of paper or cloth bags. Initial cost is low; installation is simple and inexpensive. You can hang them up any place and go to work!

Send for this NEW BULLETIN!

Get your copy of Bulletin No. 200 containing illustrations and helpful data charts for the complete Union Special line of bag closing machines. UNION SPECIAL MACHINE CO., 410 N. Franklin St., Chicago 10, Ill.

If you write maker identify as IEN - 13708

no room in your budget for
Environmental Testing?

then you haven't seen
the Tenney SERVO UNIT *and* COMPANION TEST CHAMBER

Accurate environmental testing, for a wide variety of controlled atmospheric tests, is within the reach of *all* industrial budgets. The cost is well under $2,000 for the majority of industrial needs.

The Tenney Servo Unit, a portable air-conditioning system, provides broad variations of heat, cold, and/or humidity for aging and weathering test programs. Air is circulated at the rate of 40 cu. ft. per min., capable of absorbing 1700 B. T. U. per hour at − 100°F., or of delivering 5000 B. T. U. heating effect at a maximum temperature of + 180°F. Relative humidity can be maintained from ambient to 95% in a temperature range of ambient to + 180°F. in 40 cu. ft. of recirculated air. Low temperature operation requires 10 lb. of dry ice per hour at − 180°F., ¾ lb. per hour static.

SPECIFICATIONS

Model	Size	Wgt.	Dry Ice Capacity	Total Temp. Range	Electric Req'mts.
T50-50	17"x17"x31"	145 lb.	50-70 lb.	−100°F. to + 200°F.	2 kw.
T50-150	21"x25"x33"	200 lb.	150 lb.	−100°F. to + 200°F.	2 kw.

The Tenney Companion Test Chamber provides an efficient test work-space when attached to the Tenney Servo Unit either horizontally or vertically, by a simple, sturdy device. (Servo is easily detached for use with other enclosures or tests.) Ruggedly constructed and fully insulated, this chamber is built in three sizes of work space, stainless-steel lined: 3 cu. ft. (18" x 18" x 18"), 8 cu. ft. (24" x 24" x 24"), and 27 cu. ft. (36" x 36" x 36"). Forged brass hardware is provided. Complete vapor-proofing is achieved by special gaskets. Optional equipment includes multi-paned viewing window in door, electrical connector panel, turning shafts, coaxial cable, utility ports, and high-voltage terminals.

For further information and prices write:

Tenney ENGINEERING, INCORPORATED
Dept. C, 26 Avenue B, Newark 5, N. J.

Los Angeles Representative: GEORGE THORSON & CO.
Chicago Representative: SPARTAN ENGINEERING CO.

Engineers and Manufacturers of Automatic Environmental Test Equipment

8584

If you write maker identify as IEN - 13710

GO "AMERICAN" FOR CIRCULAR WELDED PRODUCTS

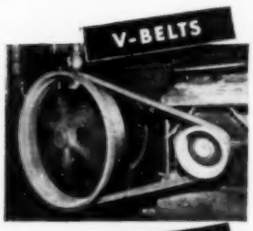
We make rings, bands, components and assemblies by either fusion or resistance welding of ferrous or non-ferrous metals. We believe that our quality is second to none and we know our products are reasonably priced. Many "Blue Chip" companies are our customers. Their products range from fractional horse-power motor shells to jet engine components.

SEND FOR YOUR COPY OF OUR 20 PAGE ILLUSTRATED CATALOG

THE AMERICAN WELDING & MANUFACTURING CO.
WARREN, OHIO

If you write maker identify as IEN - 13711

A complete line of
V-Belts and V-Belt Drives, Flat Belts and Belting



Whatever your belt drive needs, "U.S." can supply it. With "U.S." distributors and warehouses located across the country, you get immediate shipment.

U. S. Rubber V-belt technicians are specialists in the transmission of power. These service engineers are always ready to see that you get the right belt for the right job. Write to address below.

- U.S. Rainbow Multiple and F.H.P. V-Belts
- U.S. Rainbow Multiple and F.H.P. Sheaves
- Flat Belts and Belting
- Special Purpose Belts

U. S. Rainbow Q. D. Sheaves
in a complete line

Quick-demountable sheaves bring many advantages . . . simplicity . . . inter-changeability . . . lowest cost for flexible inventory. Sheaves and V-belts from the one source guarantee your getting the *right* sheave with the *right* belt.

Products of U.S. RUBBER

UNITED STATES RUBBER COMPANY
Mechanical Goods Division, Rockefeller Center, New York 20, N. Y.

If you write maker identify as IEN - 13713

CLEANING . . Wet abrasive machine for dies and molds for glass, rubber

Source: AMERICAN WHEELABRATOR & EQUIPMENT CORP. 1119 S. Byrkit St., Mishawaka, Ind.

Rinses and unloads at the right

Model 64 is a new assembly in the company's Liquamatte line of wet abrasive cleaning equipment, previously described IEN-11788-51. The new machine will handle single pieces or loads of pieces to 3,500 pounds. It is equipped with two 49 by 36 in. counterbalanced doors and has a 6-ft. track. Overall dimensions are 6 by 7 by 9 feet. As in the previous design, the work is mounted on a car carrying a rotating table that moves between the rinse and loading compartment to the right and the closed cleaning compartment to the left.

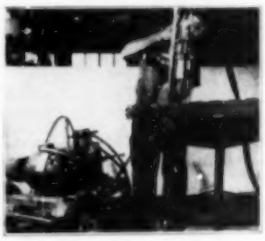
Fine mesh abrasive, suspended in water, is propelled upon the work by compressed air for the cleaning operation. Because only fine mesh abrasive is used, it is possible to maintain close tolerance dimensions without rounding sharp corners, lines or lettering in patterns or cutting into fin wall sections of the work.

Construction includes a central control panel at which the operator presses buttons to light the interior and start the operation. There are no valves to open or close. A vertical pump agitates the slurry for recirculation. It is located so it stands in submerged position and requires no priming. Arm holes are equipped with gauntlets so the operator can use his own gloves. Timing equipment is available to keep track of the number of blasting hours for the abrasive.

If you write maker identify as IEN - 13714

RIVETING . . Portable hydraulic tool has capacity for a 1/2 in. cold rivet

Source: MANCO MFG. CO. Grove & West, Bradley, Ill.



Retracts on valve release

Model R-20-185 is a new assembly in the company's portable hydraulic riveting equipment, previously described IEN-10134-51. It has sufficient opening to span a rivet 4 1/2 in. in length and will head rivets cold to 1/2 in. in shank diameter.

Pressure is supplied at 10,000 lb. by a motor operated pumping unit. The motor rates 2 hp. and operates on a 220/440-volt 3-phase ac. line. Control centers at a new valve. Weight of the riveting head is 65 pounds. The pump and its driving motor weigh 400 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13715

Speed Up Material Handling

Here's a handy, mobile crane for lifting or loading jobs around your plant. Ideal for dismantling, moving or erecting machinery . . . loading and unloading structural iron, pipe, bars, lumber and equipment of all types. The UNIT 357 is self-propelled . . . rides on rubber at road travel speed . . . is easy to maneuver even in cramped yard conditions. Operated by ONE man . . . powered by ONE engine . . . swings in a 360° circle. Full vision cab gives complete visibility. Promotes Safety. Write for Catalog.

UNIT CRANE & SHOVEL CORP.
6605 W. Burnham Street, Milwaukee 14, Wis., U. S. A.

UNIT
CRANES • CLAMSHELLS • MAGNETS

If you write maker identify as IEN - 13716

BROWNHOIST BETTER
• BUY DIRECT FACTORY
• ROPE REEVE, LINK TYPE
• WRITE FOR CATALOG

BUILDS BUCKETS FROM FOR LESS POWER WHEEL

INDUSTRIAL BROWNHOIST CORP.
BAY CITY, MICHIGAN

156

If you write maker identify as IEN - 13717

an ACCO product
CAMPBELL ABRASIVE CUTTERS

Reduce Cutting Costs

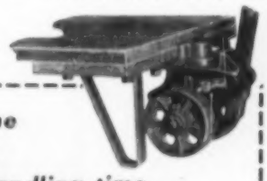
• Make fast, accurate, close tolerance cuts from hard or soft, round, hex, square, or shaped stock. Work and wheel thoroughly cooled. Wheel entirely enclosed in steel safety guard. Many models. Many automatic features.

Write for "*Principles of Abrasive Cutting*."

ACCO
CAMPBELL MACHINE DIVISION
AMERICAN CHAIN & CABLE
941 Connecticut Ave., Bridgeport, Conn.

CAMPBELL Abrasive Cutters

If you write maker identify as IEN - 13718



Universal Lift Jack and Platform.

A Bond Line that saves material handling time . . .

Bond built-for-the-job

LIFT JACKS • PLATFORMS • DOLLIES
HAND TRUCKS • TRUCK CASTERS

Bond time-saving, profit-building materials handling equipment is sold by leading industrial distributors throughout the country. For help in choosing the right equipment for your job contact any Bond distributor and write for a copy of Bond Catalog K-38.

BOND FOUNDRY & MACHINE CO.
Manheim, Pennsylvania

Hand Truck. General Purpose truck illustrated. Also Keg and Case, Barrel Drum and Beverage trucks.

If you write maker identify as IEN - 13719

Brings power paint handling Anywhere in the plant!

New... Fully Portable VERSATAL Spra-King model 7830-A

- It's fast. No shutdown for refill!
- Pumps direct from original containers!
- Cuts cleaning time in half!
- Non-tip dolly goes anywhere—up or down stairs—inside or outside the plant.

FREE—write now for literature giving full data. Alemite, Dept. B-122, 1850 Diversey Pkwy., Chicago 14, Illinois

ALEMITE Versatal SPRAY PAINT EQUIPMENT

If you write maker identify as IEN - 13720

FREE WALL CHART (28" x 54")

For industrial file users

Here is Nicholson's Wall Chart offering a quick visualization of "key" types of files in each of the groups known as:

MILL (or SAW) FILES
MACHINISTS' FILES
MILLED CURVED TOOTH and SPECIAL PURPOSE FILES
SWISS PATTERN FILES
ROTARY POWER FILES and BURS

The Chart (durably cloth-backed) is a valuable aid to modern shop economy through the selection of *The right file for the job*. Purchasing, production and toolroom heads find it a most helpful guide. Trainees learn rapidly with it.

Use your business letterhead in writing for your free copy of the Chart.

Also free with each Wall Chart:
A copy of the famous Nicholson book,
"FILE FILOSOPHY"

—a valuable 48-page illustrated "textbook" on kinds, use and care of files. Also elaborates on many of the files shown in this Chart.

NICHOLSON FILE CO., 33 Acorn St., Providence 1, R. I.
(In Canada: Port Hope, Ont.)

NICHOLSON U.S.A. — NICHOLSON — A file for every purpose — SOLD THROUGH INDUSTRIAL DISTRIBUTORS

If you write maker identify as IEN - 13721

CONTINENTAL FENCE

YOUR OWN SECURITY PROGRAM

Today, every plant needs security protection—to guard against dollar losses, and to prevent sabotage, thievery and accidents. Long-lasting Continental fence provides maximum safety for minimum investment. Contact nearest Continental sales office for a lifetime of protection and for your own fence "security program."

CONTINENTAL STEEL CORPORATION, Kokomo, Indiana
Please send FREE copy of "Planned Protection"—complete manual on property protection.
Name
Address
City State

*Trade Mrks. Reg. U.S. Pat. Off.

CONTINENTAL STEEL — CONTINENTAL STEEL CORPORATION

If you write maker identify as IEN - 13722

MACHINING . . Automatic machine drills, reams, bores cylinder blocks

Source: GREENLEE BROS. & CO.
1703 Herbert Ave., Rockford, Ill.

One of three machines

New assembly of standardized components provides for drilling, reaming, boring, counterboring, core drilling in this new automatic transfer machine. It will handle 75 cylinder blocks per hr. for a V-8 engine. The machine performs 110 operations in 38 seconds on the banks, sides and starter mounting pads of the engine blocks.

The work is received with the pan rail up. It enters the 74-ft. assembly to a turn-over fixture at the first station which raises it, rotates it 180 deg. and deposits it pan rail down. It remains in this position in its movement through the machine until it reaches another turn-over fixture in the seventh station which raises it, rotates it 360 deg. to remove the chips accumulated at the various stations. Four of the 18 stations are idle to provide for inspection and for removal if necessary.

If you write maker identify as IEN - 13723

CLEANING . . Engine driven sweeper clears 48 in. path at 4 miles per hour

Source: MULTI-CLEAN PRODUCTS INC.
2281 Ford Parkway, St. Paul 1, Minn.

No dust is "raised"

A cylindrical brush, 17 in. in diameter by 36 in. in length, operates in step with a side brush attachment to clear a floor width measuring 48 in. in this new machine. The brush will pick up dust, dirt, metal shavings scrap paper, cardboard, grass, leaves, small metal parts. Fine materials are removed from the dirt chamber by a blower and collecting bag that form part of the assembly.

Drive is by a 1½ to 2-hp. Briggs & Stratton air cooled engine. The driver rides on a trailer unit at the rear of the machine. In a test application, the machine was able to sweep 12 miles of 8-ft. warehouse aisles in 6 hours. This compares with the previous three men with push brooms working 8 hours.

Identify as IEN - 13724

New bearings, ball and roller, for Chevrolets, Fords, Plymouths, Willys-Jeeps, are available from a new stock at American Bearing Company in Minneapolis. The bearings have been assembled from surplus stores and manufacturer's stocks. Application and interchange data have been assembled in a 24 page catalog, available upon request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13725

IMMEDIATE DELIVERY ... WHY WAIT?

TO CHECK RPM IN THEIR PLANTS LEADING INDUSTRIES

Use STICHT TACHOMETERS

UNIVERSAL TYPE U
With 5 Ranges

BECAUSE THEY ARE
- MOST ACCURATE
- DEPENDABLE
- RUGGED
- QUALITY BUILT

CAT. NO. 303	CAT. NO. 322	CAT. NO. 346
30- 120 RPM	60- 240 RPM	120- 480 RPM
100- 400 RPM	200- 800 RPM	400- 1600 RPM
300- 1200 RPM	600- 2400 RPM	1200- 4800 RPM
1000- 4000 RPM	2000- 8000 RPM	4000-16,000 RPM
3000-12,000 RPM	6000-24,000 RPM	12,000-48,000 RPM

WRITE FOR BULLETIN NO. 750

HERMAN H. STICHT CO., INC.
Tachometer Headquarters
27 PARK PLACE, NEW YORK 7, N. Y.

If you write maker identify as IEN - 13726

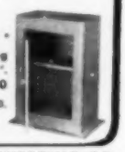
TOMLEE
Metal Cutting
BAND SAW

only $89.50
F.O.B. MINNEAPOLIS

NOW each bench can be equipped with a Tomlee to break your production bottleneck. It's a low cost auxiliary to your heavy duty metal cutting machine, so often kept tied up with big work. The rugged, cast iron Tomlee will cut any metal that will run through its 5⅝" throat. Large work table easily tilts to 45° and is grooved to take a mitre gauge for compound angle cuts. Ball bearings throughout, operates at 4 speeds. Delivered complete with simple instructions, a set of guides and a ⅝" blade. *Write for bulletin.*

Accessories

Band Saw Stand. All-steel cabinet for mounting motor and storing accessories. 15"x23"x29¾". $37.50
No. 31500 Mitre Gauge. $5.00
No. 455 Rip Fence. $5.00
½ HP Motor. 110-230 V. $43.50



ALL PRICES F.O.B. MINNEAPOLIS

TOMLEE TOOL & ENGINEERING CO.
721 Washington Ave. N., Minneapolis 1, Minn.

If you write maker identify as IEN - 13727

Warm COLD FEET with • THERMO-MAT •

Here's INSTANT RELIEF from cold, aching feet, at work or at home, sitting or standing! THERMO-MAT emits PENETRATING RADIANT WARMTH extending from toes to knees! Licks cold floor problem everywhere—*drafty locations, unheated rooms, booths, concrete floors, etc.!* Unaffected by dampness.

Plugs into 110 Volt socket—uses only 125 Watts. Size 14" x 22", full neoprene covered.

PRICE $12.00 Shipped Postpaid

SAFE, ECONOMICAL *Order now by mail for all uncomfortable locations. Describe conditions of use, type of floor, outside or inside installation.*

THERMO-MAT CO.
814 SOUTH ROBERTSON BOULEVARD • LOS ANGELES 35, CALIFORNIA

If you write maker identify as IEN - 13728

"COMMERCIAL" TANK HEADS

WRITE FOR CATALOG

THE COMMERCIAL SHEARING AND STAMPING COMPANY
1775 LOGAN AVE. YOUNGSTOWN 1, OHIO

If you write maker identify as IEN - 13729

TRI-LOK

Each Tri-Lok step consists of a panel of Rectangular, Diagonal, or U-type Tri-Lok flooring in any desired width, length, depth, and bar spacing.

SAFE—checker plate nosing bars make each step stand out clearly. Abrasive edging also available.

CLEAN—clogless, rivetless Tri-Lok joint prevents accumulation of dirt, moisture, rust.

STRONG—added strength provided at maximum load contact by shape and rigidity of nosing bar.

Write today for bulletin PK-1103

DRAVO CORPORATION
National Distributor for the Tri-Lok Company
Dravo Building, Pittsburgh 22, Pennsylvania
Sales Representatives in Principal Cities

If you write maker identify as IEN - 13730

I cut waste WITH National Electric FLEXSTEEL

- No bending tools needed
- No exacting measurements needed
- No coupling or jointing
- No short pieces or waste
- Easy to carry and handle
- Easy to fit—outlet to outlet
- Easy to cut on the job
- Easy to fish

Flexsteel is an approved pull-in and pull-out system. Listed by Underwriters' Laboratories, Inc. Sold exclusively through electrical wholesalers.

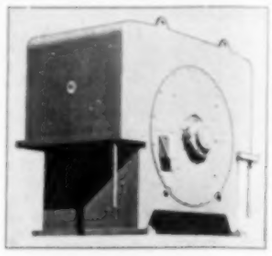
EVERYTHING IN WIRING POINTS TO

National Electric Products
PITTSBURGH, PA.
3 Plants • 7 Warehouses • 33 Sales Offices

If you write maker identify as IEN - 13732

MOTOR . . Weather protected for application in outdoor service

Source: ALLIS-CHALMERS MFG. CO.
909 S. 70th St., Milwaukee 14, Wis.



Integral protection

Dirt, paper, leaves, wind driven heavy moisture, are excluded from the windings of this new weather protected motor by its screened hooded construction and its gutter equipped drained outer hood. Air drawn into the motor windings by two fans on the sides of the rotor moves vertically upward through the screened side intakes into an expanded air space. The air enters the sides of the motor around the circumference of the yoke after making a right angle turn from the upper air space down to the fans.

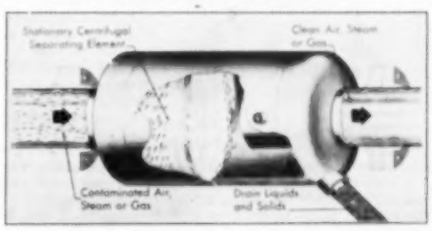
Discharge air passes down from the stator core into the discharge chamber of the motor yoke directly underneath the stator core. Air from this chamber can pass out either side of the motor and, during a very strong wind, the outside air can blow completely through this chamber without entering the motor itself.

No special concrete foundation is required. Foot height is a little higher than that of the drip proof design. The motor is particularly suited for outdoor service in power plant and process service. It can be specified in required ratings and characteristics for major auxiliary drives.

If you write maker identify as IEN - 13733

SEPARATING . . Centrifugal purifier for air, gas, steam and vapor lines

Source: V. D. ANDERSON CO.
1931 W. 96th St., Cleveland 2, Ohio



$155 for 2½ inch unit at 150 pounds

Foreign matter entering this new unit in the company's Hi-Ef separator line, along with air, gas, steam, vapor, is thrown to the inner wall of the housing by centrifugal action of a stationary element. The foreign matter collects along the bottom of the housing from where it is ejected. Flow from the outlet is clean. There is no appreciable drop in pressure.

The line includes sizes to 24 in. for pressures to 600 pounds. Those handling pressure are designed, built and stamped to the ASME Code for unfired pressure vessels. Applications include removal of oil, moisture, dirt, scale.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN - 13734

No Packing! No Stalling!

Rotary drill masonry with carbide tipped
Cyclo-Core or Cyclo-twist

REMOVABLE CYCLO-CENTER

Multiple spiral flutes, which run the full length of the shell, positively remove dust as it is pulverized. Removable Cyclo-Center for locating and starting holes. Recommended for hole sizes ¼" to 6" diameter in hard concrete, using electric rotary drill and applying pressure. Extra shank lengths available—all diameters.

Twin spiral flutes remove dust speedily and surely. Carbide tip same diameter as body, no carbide hang-over—maximum strength. Recommended for hole sizes 3/16" to 1½" in soft or medium masonry material, using an electric rotary drill, drill press or hand brace. Extra length bits available up to 36" long.

By the makers of Thunder-twist and Thunder-Core Hammer Bits. Send for new Masonry Drill Bit Guide—Helps you choose the RIGHT bit for EACH job!

New England Carbide TOOL CO., INC.
60 BROOKLINE STREET, CAMBRIDGE 39, MASS.

If you write maker identify as IEN - 13735

Send For Your Free Copy

Write for Booklet A-3

SLIPPING ACCIDENTS?

This Free 8-page Booklet Shows You How To End Them with A.W. ALGRIP

ABRASIVE ROLLED STEEL FLOOR PLATE

- A.W. ALGRIP is the world's only Abrasive Rolled Steel Floor Plate.
- Wet or dry, ALGRIP prevents slipping—even on steep inclines!
- Light, tough—thinner sections can be used.
- Easy to install—needs no maintenance.
- Over 1001 plant and product applications—wherever men walk or climb.

THERE'S NEVER A SLIP ON A.W. ALGRIP

A.W. ALGRIP

ABRASIVE ROLLED STEEL FLOOR PLATE
Product of ALAN WOOD STEEL COMPANY
Conshohocken, Pa.
Over 125 Years of Iron and Steel Making Experience

Other Products: PERMACLAD Stainless Clad Steel • A W SUPER DIAMOND Floor Plate • Plates • Sheets • Strip • Alloy and Special Grades

If you write maker identify as IEN - 13736

LONG LASTING...

KESTER FLUX-CORE SOLDER

Long lasting soldered assemblies are assured with Kester, as demanded by your Quality Control and so necessary today on all Government Contracts.

Kester Solder meets applicable Government or Federal specifications.

Free Technical Manual. Send for your copy of "SOLDER and Soldering Technique" today.

KESTER SOLDER COMPANY
4211 Wrightwood Ave., Chicago 39
Newark 5, N. J. • Brantford, Canada

KESTER SOLDER

If you write maker identify as IEN - 13737

5 Important "ROCKWELL" Features

1. Totally enclosed, dirt and dust-proof "Zerominder" dial gauge. 2. Gripsel clamp screw for quick change and proper setting of penetrator. 3. All controls grouped conveniently. 4. Enclosed, easy-to-reach, variable speed dash pot. 5. Standardized weights. These features assure accuracy and ease of operation.

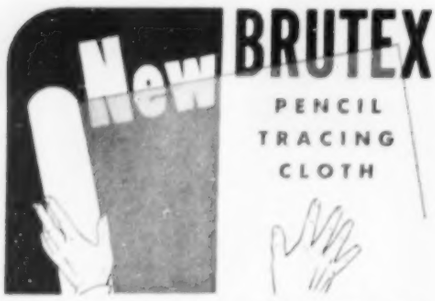
There are two models of WILSON "ROCKWELL" Hardness Testers, plus the TUKON for micro-indentation hardness testing. Write for information.

ACCO *Trade Mark Registered

WILSON MECHANICAL INSTRUMENT DIVISION
AMERICAN CHAIN & CABLE
230-K Park Avenue, New York 17, N. Y.

WILSON "ROCKWELL" and TUKON Hardness Testers

If you write maker identify as IEN - 13738



White... Moisture-Resistant!

This new, white Bruning pencil tracing cloth lets you draw better and faster than ever before, gives you an improved drawing surface with unsurpassed *permanent* translucency for top-notch reproductions.

Here are the six reasons Brutex does a better job: 1. The super-velvet matte surface is exactly *right* for pencils of even the harder grades. 2. Translucency is clear and uniform. 3. Repeated erasures do not affect the surface. 4. It's moisture-resistant. 5. Brutex won't discolor or become brittle. 6. All qualities are *permanent!*

Get free booklet from CHARLES BRUNING CO., INC., Department B122, Teterboro, N. J.

BRUNING
Everything for the Engineer and Draftsman

If you write maker identify as IEN - 13739

What do you do when you don't have the right size v-belt in stock?

1. **Contact your supplier for a replacement** . . . wait for delivery and watch production stay at zero.
2. **Send someone to get the required belt** . . . pay your employee while he goes for the belt and pay through loss of production.
3. **Stock VEELOS** . . . and always have the right size v-belt when you need it because any length can be made up from a 100-foot reel. Inventory is automatically maintained. Available from distributors.

Get the facts on Veelos—the v-belt that keeps production up and holds inventory costs down—write for your VEELOS DATA BOOK which includes construction, installation and use details.

VEELOS THE LINE V-BELT

MANNHEIM MANUFACTURING & BELTING CO.
651 Menhel Street, Manheim, Pa.

Adjustable to Any Length • Adaptable to Any Drive

If you write maker identify as IEN - 13740

Industrial CRANES

HANDLE MATERIAL TO AND FROM OPEN CARS, TRUCKS AND MACHINES AT LOWER COST

Pillar Cranes Up to 6 Tons Rotate 360 Degrees

Industrial CRANES

INDUSTRIAL EQUIPMENT CO.
321 NORTH ADA STREET CHICAGO 7, ILLINOIS
Write for Catalog. Representatives in Principal Cities.

If you write maker identify as IEN - 13741

COOLING . . Drinking fountains served by remote water cooler unit

Source: WESTINGHOUSE ELECTRIC CORP.
651-55 Page Blvd., Springfield 2, Mass.

For shop and office

Type WAP7A for air cooled operation and Type WWP13 in water cooled design are new electric water coolers designed to supply several fountain outlets at various locations. The air cooled model will supply about 12 gph. of 50-deg. F. drinking water with inlet temperature at 70 deg. F. and room temperature at 80 deg. F. The water cooled design will supply about 21 gph. under the same conditions.

Both designs employ tin plated brass water cooling chambers and copper coils for refrigerant flow. The chamber is insulated with granular cork sealed in an air and moisture tight enclosure. The water carrying parts are insulated to prevent sweating. Cooling action is provided by a hermetically sealed motor compressor, evaporator and condenser.

If you write maker identify as IEN - 13742

CONVEYING . . Portable belt assembly to handle work from under a machine

Source: METZGAR CO.
417 Douglas St. N. W., Grand Rapids 4, Mich.

Special sizes to order

New design of the company's Press-Helper includes a telescoping mounting leg under the elevated end for discharge height adjustment in a range between 22 and 42 inches. The telescoping unit is equipped with an adjusting screw for close setting to an exact discharge height. Drive is by a geared head motor mounted at the side so it does not extend beyond the delivery end or below the frame. The machine shown in the illustration measures 6 ft. in length by 16 in. in width overall. It is equipped with a 12-in. Goodyear Rough-Top belt operating at 15 fpm. The motor rates ½ hp. on 110-volt 60-cycle ac.

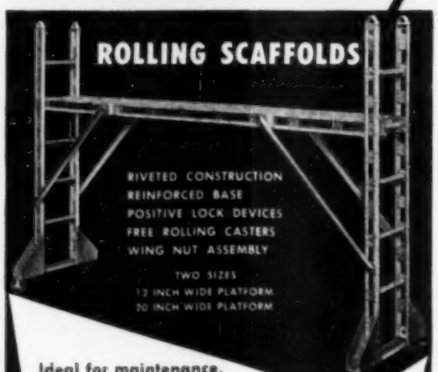
Identify as IEN - 13743

Two wheel cart assembles three types of hand fire extinguisher in a new design by General Pacific Corporation in Los Angeles. One is a vapor-liquid unit for oil fires. A second is a dry chemical design for electrical fires and the third is water type containing anti-freeze for fires in wood, paper, textiles. The cart handle stands about waist high.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13744

ALUMINUM LOUISVILLE

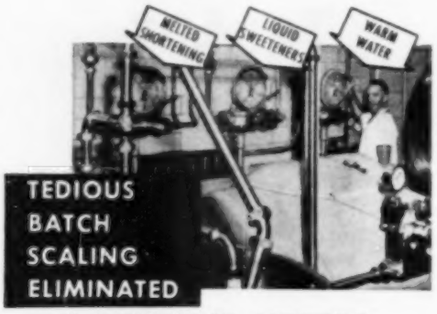


Ideal for maintenance, painting, repairs . . . quick, easy assembly—raises in one foot increments. Stores compactly. Write for prices.

ALSO COMPLETE LINE STANDARD LADDER PRODUCTS

LOUISVILLE LADDER COMPANY
1101 W. Oak St. — Dept. 7A — Louisville 10, Ky.

If you write maker identify as IEN - 13745



TEDIOUS BATCH SCALING ELIMINATED with NEPTUNE METERS

These accurate Neptune liquid meters automatically measure ingredients into batches, eliminating tedious scaling, improving uniformity of quality, tightening up on inventories, and saving clean-up time. Neptune can do it for you, too. Ask our field engineers for ideas in handling over 100 industrial liquids—just phone our nearest office.

Send for new Catalog 566-NI Today!

NEPTUNE METER COMPANY
50 West 50th Street • New York 20, N. Y.

Branch Offices
ATLANTA • BOSTON • CHICAGO • DALLAS
DENVER • NO. KANSAS CITY, MO.
LOS ANGELES • LOUISVILLE • PHILADELPHIA
PORTLAND, ORE. • SAN FRANCISCO

If you write maker identify as IEN - 13746

EXAMINE THE DESIGN OF YOUR PRODUCTS AND MACHINES...

no doubt you too can save time—save materials..and increase your profits—by using NATIONAL RETAINING RINGS

These Sure Grip Screw Holding Screw Drivers, made by The Bridgeport Hardware Mfg. Corp., illustrate an obvious and a very simple application of retaining rings.

But there are thousands of other places where they will save—from such simple applications as tools, toys, small parts and small gadgets to complicated heavy duty engines, large drill presses, etc.

And in addition to their economy, they frequently improve your products.

These inexpensive, yet very efficient, artificial shoulders are widely used, and these uses are increasing daily.

It's wasteful to cut down shafts to make shoulders. Redesign to groove smaller shafts and housings and use these high grade steel rings.

Let our engineers consult with you. Send for folders.

Don't pass up this opportunity to increase profits.

THE NATIONAL LOCK WASHER CO.
NEWARK 5, NEW JERSEY MILWAUKEE 2, WISCONSIN

If you write maker identify as IEN - 13748

USE HOUGHTON

Cosmolube

the multi-purpose grease with a high melting point

It adheres to metal and resists oxidation. Won't separate. Resists moisture. A heavy-duty grease that's used for HOT spots, COLD spots and WET spots throughout industry.

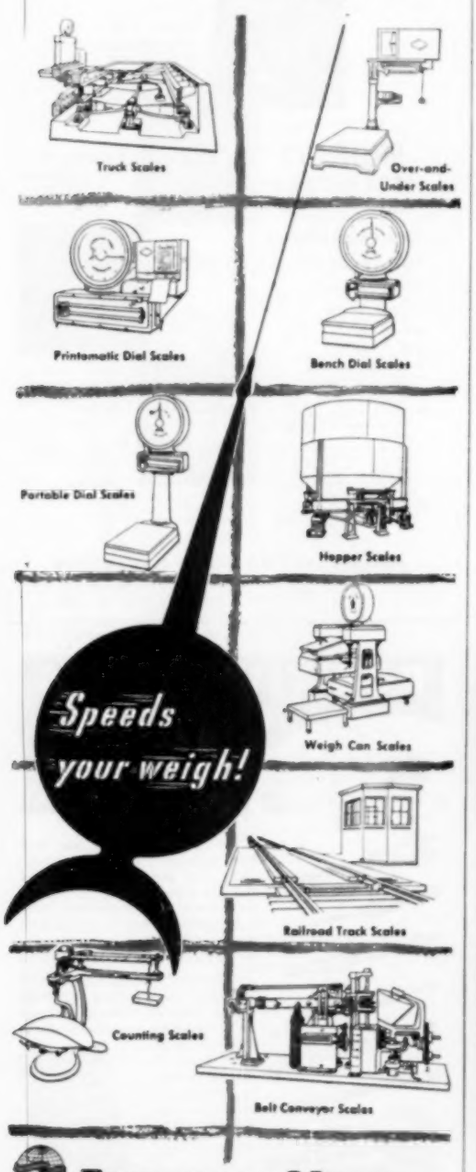
Try a drum of Cosmolube.

COSMOLUBE
...a product of

E. F. HOUGHTON & CO.
PHILADELPHIA · CHICAGO · DETROIT · SAN FRANCISCO

Ready to give you on-the-job service . . .

If you write maker identify as IEN - 13749



FAIRBANKS-MORSE,

a name worth remembering

SCALES · DIESEL LOCOMOTIVES AND ENGINES · ELECTRICAL MACHINERY · PUMPS
HOME WATER SERVICE EQUIPMENT · RAIL CARS · FARM MACHINERY · MAGNETOS

If you write maker identify as IEN - 13751

TRUCK . . Electric fork design rates 2¼ ton, travels to 7 mph.

Source: BAKER-RAULANG CO.
1248-52 W. 80th St., Cleveland 2, Ohio

Employs Baker motors

A **U-turn** can be made in an 8½-ft. aisle by this new Type FS-25 fork truck with its 65½-in. turning radius and 38-in. wheelbase. Overall length with 48-in. forks is 119 inches. Width is 34 inches. Universally mounted trailing axle construction includes rubber blocks to cushion twists and bumps and maintain stability when passing over obstructions or standing on uneven floors.

The motor drives the power axle in connection with a worm and gear transmission. Dynamic braking stops the truck smoothly, prevents motor burnout caused by sudden reversals. Standard fork lift is to 130½ in. with other heights to order.

If you write maker identify as IEN - 13752

PLASTIC . . Micarta sheet presents a colorful spatter pattern

Source: UNITED STATES PLYWOOD CORP.
55 W. 44th St., Room 500, New York 18, N. Y.

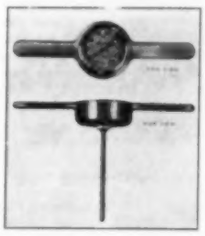
Four inch sample upon request

Mardi Gras trade names a new spatter pattern Micarta sheet. It is available in six colors including red, blue, green, yellow, light gray and dark gray. The sheet is suited for use as table, counter and work surface tops, for kitchen equipment, as cabinet and vanity table tops, as bar and play table tops and random pieces. The Micarta is resistant to attack by acids, heat, cold. It will not chip, splinter or corrode.

If you write maker identify as IEN - 13753

THERMOMETER . . Dial type unit with handle to assist in operation

Source: W. C. DILLON & CO.
14620-K Keswick St., Van Nuys, Calif.



Handle is removable

New assembly of dial thermometer, made of stainless steel, and a double arm aluminum handle assist an operator to read temperatures in hot asphalt, foundry sand, chemical mixtures without danger of burning his fingers. Three dial diameters are between 2¼ and 4¾ inches. The stem length is available to 72 inches. Temperature range is subject to specification with readings in Fahrenheit or Centigrade. A tempered glass crystal covers the dial in standard construction. Plastic is available.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13754

YOU CAN USE THIS HYDRAULIC
HAND PUMP

Meets Aircraft, Ordnance and Domestic Specifications

ALUMINUM BODY — STAINLESS PISTON AND WORKING PARTS

★ Double Check Valve Holds Pressure At Any Position of Handle.
★ Pre-Set or Adjustable By-Pass or Pressure Relief Valve.
★ Equipped With Either Stem, Socket or Extension Type Operating Handle.
★ Available In Two Standard Sizes, or to Your Special Specifications. Write for Quotation.

ALTEN
Foundry & Machine Works, Inc.
LANCASTER · OHIO

If you write maker identify as IEN - 13755

Trims up to $47 a month from power bills with GE CAPACITORS

A West Coast meat packing plant which uses 500 hp of induction motors to run its processing equipment had a power factor that seldom got above 81%. Rebates on the plant's power bill were down to about $3 a month.

Power factor raised from 81% to 96%. Then G-E engineers recommended the installation of 60 kvar of G-E capacitors at a total cost of $355.50. Power factor rose to better than 96% and stayed there. Rebates, which now amount to $45—$50 every month, paid for the capacitor equipment in less than 9 months. *And these savings will go on indefinitely.*

Key to lower power costs. This West Coast plant is just one of the many that are cutting power costs with capacitors. If your power factor is below 85% and if there is a power-factor or kva-demand clause in your power contract, chances are you can make similar savings. Your local G-E sales office or authorized G-E agent or distributor can help you—or write to Section 407-208 for booklet GEA-5632—"How to Use Capacitors to Reduce Power Costs and Gain System Capacity." *General Electric, Schenectady 5, N. Y.*

GENERAL ELECTRIC
407-208

If you write maker identify as IEN - 13756

***AGAIN*—MILLERS FALLS DRIVERS SOLVE ONE OF THE MOST EXACTING ASSEMBLY JOBS IN INDUSTRY**

Too little torque means loose connections. A hair too much, and brittle ceramic insulators crack. That's the problem when you're running nuts on Lundey terminals.

Many production men wouldn't even attempt the job with a power driver. Yet, Millers Falls versatile No. 50's are doing it day in and day out for a leading electronics manufacturer. And they're doing it quickly, cheaply, accurately—thanks to the patented "Adjustomatic" Clutch.

Write for full information on these powerful, precision electric drivers. Sizes and types available for a wide range of applications.

LUNDEY TERMINALS in sizes down to 1/16" are typical of the delicate assemblies being handled successfully by Millers Falls super-sensitive electric drivers.

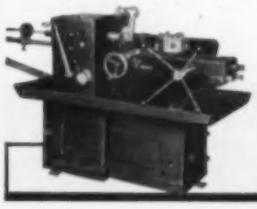
MILLERS FALLS TOOLS
The Mark of Superiority

MILLERS FALLS COMPANY
Dept. P, Greenfield, Mass.

If you write maker identify as IEN - 13757

No. 601 "RAPIDUCTION" the SIMPLIFIED LATHE

You can train new operators in double-quick time on Oster "RAPIDUCTION" Lathes. Optional features make it economical to equip these machines to meet YOUR needs exactly . . . with worm drive or direct drive . . . with 6-position turret or single tool post . . . with 2-speed or 4-speed motor . . . and other options. Automatic chuck capacity: 1½" round bar. Catalog No. 601 sent promptly. Write:



THE OSTER MFG. CO.
2053 EAST 61st STREET
CLEVELAND 3, OHIO

If you write maker identify as IEN - 13758

Goes further!

- No waste
- Lasting "Tack"
- Full measure
- Stays Fresh
- Best buy for plant supply

In single rolls, or 10-roll cartons — each roll wrapped in cellophane Jenkins Bros., (Rubber Div.), 100 Park Avenue, New York 17.

JENKINS Gold Seal Tape
FRICTION...RUBBER

MADE BY JENKINS BROS . . . MAKERS OF FAMOUS JENKINS VALVES

If you write maker identify as IEN - 13759

ROLLAWAY SEMI-LIVE SKIDS AND JACKS

FEATURING THE BE-NU TOP

Steelbound Rollaway Skids combine the best features of bolted and welded designs. The frame supporting members are arc welded, and the renewable hardwood deck is tightly clamped with steel bolts of extra tensile strength. Welded in, heat treated, steel connecting pin. Semi-steel rubber-tired or Flor-Saver wheels with Hyatt roller-bearings, heat-treated steel axles.

CAPACITIES: 1500, 2500, and 5000 POUNDS

YALE AND TOWNE ROLLAWAY JACKS are stocked at the Lanham Company's plant and are sold and shipped directly from Louisville for use with ROLLAWAY SKIDS.

SECTIONAL BINS — BE-NU TOP SKID PLATFORMS — SKID BOXES

THE LANHAM COMPANY
1405 S. 12th St., Louisville, Kentucky

If you write maker identify as IEN - 13760

Femco COMMUNICATION

"There have been days when our Trolleyphones paid for themselves in a single day!"

FOR MINES
FOR MILLS

Easy to Buy
•
Easy to Install
•
Easy to Use
•
Make Us Prove It

Femco TROLLEYPHONE

Uses existing wires and power supply to provide clear voice communication over load speakers. Bulletin No. 25.

Femco AUDIOPHONE

Wherever wires can be laid or run you can have Femco Audiophone systems installed. Bulletin No. 26.

LOW COST • LOW MAINTENANCE

FARMERS ENGINEERING
A MANUFACTURING COMPANY
549 Brushton Ave., Pittsburgh 21, Pa.

"YOUR VOICE IS ACTING"

If you write maker identify as IEN - 13761

TESTING . . Laboratory bath assembled from standard components

Source: FISHER SCIENTIFIC CO.
719 Forbes St., Pittsburgh 19, Pa.

Ask for Unitized Bulletin

Unitized designates a new laboratory bath for constant temperature work. The design permits the laboratory worker to build an assembly to meet his particular requirements. Available for this assembly are three Pyrex glass jars measuring 12 in. in diameter and 12, 18 and 24 in. in height. They provide 4.5, 7.5 and 10-gal. capacity when filled up to 3 in. from the top. Any one of the cylinders can be set on the single cast metal base and other units added as required.

A set of three support rods matches each size of bath jar. They screw into the base and make any other support stands unnecessary. They will hold apparatus at various heights. The bath can be held at constant temperature over a range from minus 20 to 200 deg. C. with a combination of several available heaters, cooling coils, stirrers and thermo-regulators. Output of the heaters can be varied by using a Powerstat voltage regulator in the heater line.

Four designs of thermo-regulator provide for a choice of control operation. Control circuits for the stirrer, continuous heater and intermittent heater are brought together in an electronic control unit.

If you write maker identify as IEN - 13762

COUNTING . . Magnetic unit with rectifier for long service life

Source: PRODUCTION INSTRUMENT CO.
700-10 W. Jackson Blvd., Chicago 6, Ill.

A rectifier is built into the assembly of the company's previously developed Wizard electric counters so the magnetic mechanism is operated on dc. from the 115 or 220-volt ac. source. Net result is an increase in service life from about 150 million to about 350 million counts. The counter is available in standard, panel mount and dust proof types with 4 to 6-digit assemblies. It can be reset by a knob or key.

Identify as IEN - 13763

Dari-O-Matic is a new four-station vending machine for cartons of milk, orange or other fruit drinks, canned juices. It holds about 500 half-pint cartons in precooled storage and in vending positions. Coin mechanisms can be supplied to make change. Fruit-O-Matic is making it in Los Angeles.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13764

FOR HEAVY DUTY CUTTING
IT'S THE BAKER TRU-EDGE SHEAR
CHECK THESE FEATURES

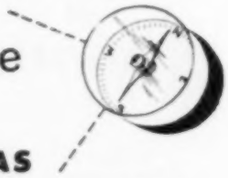
- BURR FREE EDGE
  no finishing operation necessary
- EASY TO OPERATE
  no starting hole necessary
- 48" THROAT
- DOES BEADING AND FORMING
- CUTS 10 TO 36 FEET PER MINUTE
- ONLY 5 MOVING PARTS
- CAPACITY 6 GAUGE IN MILD STEEL
  7 GAUGE IN STAINLESS STEEL
- DELIVERY FROM STOCK
- COST? . . . $1960.00 f.o.b. TOLEDO

In actual cases on record, the Baker Tru-Edge Contour Shear cuts operating time to less than 1/10 of the time required on other machines. The Tru-Edge Contour Shear is made by Baker Brothers, Inc., under license from Industrial Devices Corp., Detroit, Mich.

BAKER BROS., Inc. Toledo, Ohio
Makers of Better Machine Tools . . . Since 1867

If you write maker identify as IEN - 13765

Finding the best in GAS WELDING SUPPLIES



What are your gas-welding supply requirements? Welding Rods? Fluxes for welding and brazing? Silver brazing Alloys? Carbon rods and Plates? Or Asbestos Paper?

You'll find all the types and forms you need for a complete range of gas welding in Airco's Gas Welding Supply Catalog No. 12.

Send for a free copy today. Please write us on your business letterhead for Gas Welding Supplies, Catalog 12. Address: Advertising Department, Air Reduction Sales Company, 60 East 42nd Street, New York 17, N. Y.

AT THE FRONTIERS OF PROGRESS YOU'LL FIND AN AIR REDUCTION PRODUCT

AIRCO

AIR REDUCTION

AIR REDUCTION SALES COMPANY — AIR REDUCTION MAGNESIUM COMPANY
AIR REDUCTION PACIFIC COMPANY
REPRESENTED INTERNATIONALLY BY AIRCO INTERNATIONAL
Divisions of Air Reduction Company, Incorporated
Dealers and Offices in Principal Cities

If you write maker identify as IEN - 13766

MODEL A-1D
48" Single Screen SWECO Separator

MODEL F-4D
48" Four Screen SWECO Separator

MODEL H-1D3
18" Single Screen SWECO Separator

MODEL H-4D
18" Four Screen SWECO Separator

SWECO SEPARATORS

... are Engineered for Every Screening Need

- Efficient Single or Multiple Deck Screening
- Proved Greater Production Capacities
- From Coarse to as fine as 325 Mesh
- Wet or Dry Screening
- Low Cost Operation
- Unit Completely Self Contained with only Three Moving Parts
- Readily Adjustable Horizontal and Vertical Motion
- Clamp Ring Insures Rapid Screen Cloth Changes
- No Special Foundation, Supports or Base Required for Instant Production
- Production Separation with Laboratory Accuracy

Both Standard and Custom-Engineered Models Available

Write now for new 8-page catalog

SWECO SEPARATOR DIVISION
SOUTHWESTERN ENGINEERING CO.
4800 Santa Fe Ave., Los Angeles 58, Calif.

If you write maker identify as IEN - 13767

POSITIVE GRIPS
THE "HAMMER-LOCK" and Electroline FITTINGS

The "Hammer-Lock" has long been a favorite grip of wrestlers. But just as popular, in Industry, is the Electroline Fitting . . . these safe, economical, permanent wire-rope connectors may be installed by unskilled labor in a matter of minutes with ordinary mechanic's tools.

Electroline Fittings slash re-roping costs—and prolong wire-rope life by damping vibration stresses and overcoming rope fatigue at entrance to the fitting. Send for catalog describing "positive-grip" Electroline Fittings!

Electroline Company
4121 SOUTH LA SALLE STREET
CHICAGO 9, ILLINOIS
IN CANADA: POWERLITE DEVICES, LTD., TORONTO

If you write maker identify as IEN - 13768

Can our product help you improve your product?

This is **INNER-SEAL.** It's extremely durable, extremely effective . . . with many features that eliminate sealing problems in the manufacturing of countless products.

Inner-Seal's bead is of *live sponge rubber* which compresses under pressure, then springs back into shape. Its flange is of *woven spring wire*, tough but flexible enough to fit snugly around corners. Its coating is of *waterproof neoprene* . . . designed for sub-zero or tropical temperatures, sunlight, humidity, grease, oil or abrasion. Available in various dimensions. Standard Inner-Seal in many colors . . . heavy-duty "dumb-bell" type in black . . . special types can be made to order.

Although Inner-Seal is most widely known in the refrigeration, railway, shipping and automotive fields, it's continually finding many new applications. Maybe you have one . . . maybe we can help!

FREE SAMPLES and complete information. *Write today.*

Bridgeport INNER-SEAL WEATHER STRIPPING

BRIDGEPORT FABRICS, INC., BRIDGEPORT 1, CONN.

If you write maker identify as IEN - 13769

85000 RPM

This precision gear set, made by Amgears, is part of an Allosearch high speed turbine assembly operating at speeds of 85,000 RPM

Amgears offers you complete facilities for producing precision gears—in any quantity—exactly to your specifications. Open and enclosed assemblies are an Amgears specialty. Amgears' large capacity, in effect, provides a fully manned, completely tooled gear department for each customer. When you work with Amgears, it's like having your own shop...without the headaches.

Phone, write or wire for an Amgears Engineer today.

AMGEARS, inc.
6633 W. 65th St., Chicago 38, Ill.
POrtsmouth 7-2100
7450 Melville, Detroit 17, Mich.

If you write maker identify as IEN - 13771

STRAPPING . . Air operated machine mounts three strapping mechanisms

Source: ACME STEEL CO.
2854 Archer Ave., Chicago 8, Ill.

Compresses and straps

A filled package is moved into position beneath the head of this new Model F-3 machine on a roller conveyor. Controls are operated to bring the head down upon the package and compress it by applying a predetermined amount of air pressure. While the package is held in compressed position, the operator feeds strapping for those of the three mechanisms that are in correct position to surround the package. He tensions the strapping, seals it and cuts off the free end to complete the operation.

Two straps can be placed at one time in the position in which the package is shown in the illustration. When the operator releases the head and turns the package 90 degrees on the roller table, three straps can be placed, all on 15-in. centers.

The machine will take packages to 50 in. in width and to 53 in. in uncompressed height. It employs the company's standard Steelstrap in ½ and ⅝ in. widths. It occupies a floor space measuring 5 by 7 feet. Required overall clearance is 8½ feet. Operation is on 110-volt 60-cycle ac. and on compressed air at 50 pounds.

If you write maker identify as IEN - 13772

INSULATING . . Plastic tape to wrap pipe lines laid underground

Source: MINNESOTA MINING & MFG. CO.
902 Fauquier St., St. Paul 6, Minn.

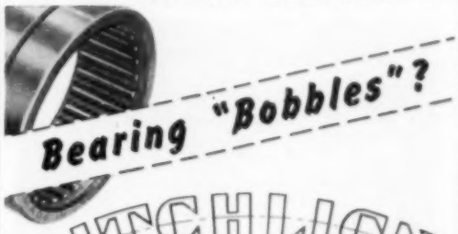
Application data and prices in 8 page folder

No. 50 and 51 Scotchrap are new designations for the company's electrical tapes previously described IEN-110-52. No. 50 is 10 mils in thickness and is recommended for wrapping joints where conformability to irregular surfaces is desired. No. 51 is 20 mils in thickness and is recommended for wrapping straight runs of pipe. Tensile strengths are 25 and 60 lb. per inch of width. Adhesion is 20 oz. per inch in both cases. Dielectric strength is 10,000 and 22,500 volts with insulation resistance at 200,000 megohms.

Both tapes are available in carton lots containing either 4 or 8 squares, each square measuring 100 square feet. The rolls are supplied in 100 ft. lengths and in widths of 1 to 12 in. in 6 steps. Polyvinyl chloride is the plastic employed.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN - 13773



Bearing "Bobbles"?

PITCHLIGN
Trade Mark

Roller Bearings may be the answer

Find Out!

RBC's PITCHLIGN bearings use a new type of 4-way roller control applied so that maximum efficiency is always obtained . . . rollers will not cock or jam as a result of incidental misalignment. PITCHLIGN saves weight, saves money—has the longest working life of any interchangeable bearing on the market. Get the facts! Write for Bulletin SF. 1066.

WRITE TODAY!

RBC

ROLLER BEARING COMPANY OF AMERICA
TRENTON, N. J.

If you write maker identify as IEN - 13774

M&M

GIANT KEYSEATERS

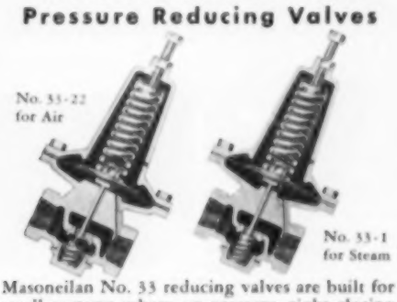
M & M Giant Keyseaters, built in a wide range of sizes, speedily and accurately cut internal keyways or splines in the bores of pulleys, gears, fly wheels or any other machine part. Special fixtures and cutters are available for unusual shaped keyways and taper work. Send us your problems today.

MITTS & MERRILL
1014 South Water • SAGINAW, MICH.

If you write maker identify as IEN - 13775

For Steam or Air

MASONEILAN NO. 33
Pressure Reducing Valves



Masoneilan No. 33 reducing valves are built for small systems where an accurate, tight closing valve is needed. Compact. Easy to service. Their stubborn dependability and simple construction minimize maintenance . . . make them unusually economical.

Sizes from ¼" to ¾". Reduced pressure ranges 2-20; 20-40; 40-100 psi. Maximum working pressure 200 psi.

Call your local Industrial Distributor for fast, reliable service

MASON-NEILAN REGULATOR CO.
1188 ADAMS STREET, BOSTON 24, MASS.

If you write maker identify as IEN - 13776

CUTTING COSTS WITH ALLMUL

"B&W ALLMUL Firebrick has 6 times the life plus..."

Replacing super-duty firebrick in a cupola front-slagger of a malleable duplexing operation three times a week was an expensive chore. B&W Allmul in the same location lasts approximately six times as long. Costs drop, too, because of savings due to less frequent relining.

Bulletin R-29 gives all the facts on B&W Allmul. Write for your copy.

Bulletin R-29 gives all the facts on B&W Allmul. Write for your copy.

THE BABCOCK & WILCOX CO.
Refractories Division
GENERAL OFFICES: 161 EAST 42nd ST., NEW YORK 17, N. Y.
WORKS: AUGUSTA, GA.

If you write maker identify as IEN - 13777

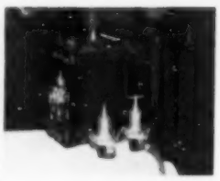
you can get in FAFNIR Ball Bearings this small

• For extremely small shafts in instruments, home appliances, cameras and projectors, fractional h.p. motors, Fafnir makes several series of extra small ball bearings . . . in metric bore sizes down to 4 mm and in inch sizes down to 1/8". Available with standard, special or super-precision tolerances. Three constructions . . . filling slot, non-filling or spring type retainers. Can be fitted with grease shields, felt seals, Mechani-Seals or Plya-Seals. If you want top performance on a small shaft — Fafnir has the answer. Write for new Instrument Bearing Catalog. The Fafnir Bearing Company, New Britain, Conn.

FAFNIR
BALL BEARINGS
MOST COMPLETE LINE IN AMERICA

If you write maker identify as IEN - 13778

how NORGREN air regulators solved design problem



The Niles Tool Works of the Baldwin-Lima-Hamilton Corp., with Norgren cooperation, developed this setup using a Norgren Regulator and Relief Valve to obtain the extremely accurate control needed for the counter-balancing air cylinder of the side head on their Car Wheel Borer.

WRITE, NOW, FOR DETAILS IN NORGREN BLUEPRINT NO. 117

Norgren®
C. A. NORGREN CO.
3432 So. Elati St., Englewood (suburb of Denver)
IN COLORFUL COLORADO

If you write maker identify as IEN - 13779

Power failure is no light matter!

FAIRBANKS-MORSE
GENERATING SETS

Many things can cause power failure — fires, explosions, traffic accidents, human error. And all of them can lead to injuries, property damage — even death. Then may come lawsuits and staggering debts.

Your own business is not immune. But the severity of the disaster can be minimized if you have a Fairbanks-Morse Generating Set standing by to cut in instantly when city or rural high line service is halted.

A Fairbanks-Morse Generating Set is the cheapest insurance you can buy! Ask your local Fairbanks-Morse dealer to show you why. Or write Fairbanks, Morse & Co., Chicago 5, Ill.

FAIRBANKS-MORSE,
a name worth remembering

IDEAS FOR YOU

Items of particular interest in the news other than straight new products, development pointing toward the future, unusual procedure to accomplish a point, suggestions for practical action, each to provide ideas for you.

Identify as IEN - 13780

A hot job of work holding is performed by a group of Detroit Stamping Company's toggle clamps in a stress relieving fixture for a magnesium assembly. The clamps hold welded panels flat on the fixture for heating in a furnace to 500 deg. F. to be followed by cooling. Cracks develop in the asbestos backed fixture but the clamps retain their pressure to hold the work.

Identify as IEN - 13781

For $200 each a chemical company salvaged a number of worn compressor piston rods that were quoted new at $1,000. The job was done by employing Metallizing Engineering Company's metal spraying equipment in the hands of its service experts. The rods were 5¼-in. alloy steel. The worn length was about 2½ ft. on either side of centrally located 19-in. pistons. Because the metallized rods last longer than original rods, the chemical company now has replacement assemblies metallized before they are put into service.

Identify as IEN - 13782

Plungers for proportioning pumps and for corrosive and abrasive fluids are being made of high-strength alumina ceramic by Coors Porcelain Company in Denver. Sizes range from 1/16 to 5 in. in diameter. Ceramic bar stock is ground and polished. One end is made with a reduced diameter to fit in a steel adapter for assembly in the pump. The company's engineers are prepared to design the required adapters to fit pumps of specified size, capacity and operating characteristics when requested.

If you write maker identify as IEN - 13783

Save Valuable Cutting Tools WITH WEBBER INDUSTRIAL FREEZERS

★ By the treatment of cutting tools in temperatures to −125°F., in Webber Industrial Freezers, plant supervisors in many of America's large industrial plants report that tool life has been increased as much as 490%. Much less set up time is required because tools last longer. Tools received from the manufacturer a trifle undersized are saved by cold treatment and extended tool life on extremely difficult jobs which a tool formerly served for only one cut has been materially increased. By the stabilizing of metals at −125°F., a permanent accuracy and stability which would be impossible otherwise is accomplished. This treatment performs in a matter of hours the equivalent of four to eight years of natural aging. There's a Webber Unit for every industrial need.

Write for new bulletin giving more complete information.

INDUSTRIAL FREEZER DIVISION
WEBBER APPLIANCE CO., INC.
8-3740 MADISON AVENUE • INDIANAPOLIS 3, INDIANA

If you write maker identify as IEN - 13784

MEASURE TENSION at a glance with Apco Mossberg Torque Tools

There's no need for guesswork in testing or adjusting final tension on precision assembly screws — not when you can do the job quickly and accurately with Apco Mossberg Torque Screw Drivers!

Now available in a full range of sizes — from 0-6 inch ounce models to 0-24 inch ounce models with large positive and positive-negative dials — Apco Torque Screw Drivers facilitate controlled screw tightening on all types of electrical equipment. Every model is easy to handle . . . simple to operate . . . completely dependable. Large, easy-to-read dials assure fast, accurate measurements. AND . . . Apco Torque Drivers feature standard Stanley Tool holders to accommodate interchangeable bits, make tightening and testing torque on all types of screws easy — even on light plastic screws where uniform tension is a requisite.

Contact your distributor or write direct now, for complete details on these and other Apco Mossberg "Torque Tools for Industry."

APCO MOSSBERG CO.
ATTLEBORO, MASS.

If you write maker identify as IEN - 13785

WHICH DO YOU DO?

LOADING & UNLOADING
SHEET FEEDING
WORK POSITIONING
DIE HANDLING

RAYMOND
PORTABLE Hydraulic ELEVATING TABLE

FITS ALL FOUR!

No table has so many practical uses as this RAYMOND Portable Hydraulic Elevating Table! Use it for positioning or handling throughout the plant . . . see how it lightens your work load. RAYMOND Hydraulic Elevating Table has sturdy 30" square top which can be rotated when desired.

Convenient foot pump simplifies raising and lowering, leaves operator's hands free. Smooth-rolling casters make table highly portable. Floor lock holds it securely in place. Standard Model elevates from 28" to 44"; Telescopic Model from 28" to 50". Both models have 2,000 lb. capacity.

SEND FOR BULLETIN 232

. . . it gives you the facts on this RAYMOND Portable Hydraulic Elevating Table. Write for it today.

RAYMOND
ELECTRIC INDUSTRIAL TRUCKS • HYDRAULIC ELEVATING EQUIPMENT
The RAYMOND CORPORATION
Formerly LYON-Raymond Corporation
3569 Madison St., Greene, N.Y.

If you write maker identify as IEN - 13787

BOOST PRODUCTION

COBURN

OVERHEAD CONVEYING EQUIPMENT

Meet today's need for maximum plant production, increased efficiency and faster handling of materials with Coburn Overhead Conveying Equipment. It gives you unobstructed floor space, requires very little headroom, makes it easy to spot work directly over machines. Loads up to 3000 lbs. handled by hand chain or electric hoist; power-operated equipment also available.

For additional information write to Sales and Engineering, 56 Sterling St., Clinton, Mass., or consult your classified telephone directory. Write today for catalog #220.

EAST: Wickwire Spencer Steel Division, Clinton, Mass.
WEST: The Colorado Fuel & Iron Corporation, Denver, Colorado
PACIFIC COAST: The California Wire Cloth Corporation, Oakland, California

COBURN PRODUCTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION THE COLORADO FUEL AND IRON CORPORATION CFI

If you write maker identify as IEN - 13788

Pangborn "EZ" Hydro-Finish paid for itself in three months at Benedict-Miller, Newark, New Jersey.

Checking with micrometer proves Hydro-Finish can hold tolerances as close as .0001".

"EZ"* DOES IT!

***At Benedict-Miller, PANGBORN "EZ" Hydro-Finish® Cabinet**

- **Saves Labor!**
- **Gives Better Surfaces!**
- **Increases Business!**
- **Saves Money!**

"EZ does it," says Robert M. Bloss, General Manager at Benedict-Miller of Newark, N.J. "In fact, our EZ Hydro-Finish does a lot more than we ever figured it could!"

Take one case in particular—cleaning the inside surfaces of doll head molds. From a required hand cleaning time of three hours per mold, Hydro-Finish stepped up production to 80 in five hours—a labor saving of well over $200 on this job alone!

Heat treat scale was previously removed by pickling. But after trying Hydro-Finish, the report was: "Besides all the extra costs and trouble, an acid pickling surface just can't compare with a Hydro-Finish surface." On some items, Benedict-Miller's heat treat business was actually *doubled*, as customers learned about the amazing finish B-M (and EZ) turned out!

It all adds up to better quality, faster production, and increased profits for Benedict-Miller and its customers. Learn how Pangborn can do this for you, too. Write today for Bulletin 1400-A. Address: PANGBORN CORP., 2300 Pangborn Blvd., Hagerstown, Maryland.

Pangborn

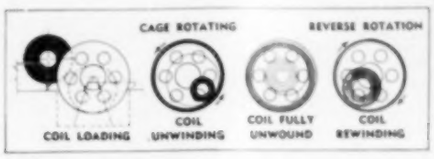
Look to Pangborn for the latest developments in Blast Cleaning and Dust Control equipment

BLAST CLEANS CHEAPER
with the right equipment for every job

IDEAS FOR YOU—Continued

Identify as IEN - 13790

Low first cost combines with low labor and operating cost for a remarkable new method of pickling coiled hot rolled



steel strip in widths from 2 to 24 in. and thickness from 0.042 to 0.188 inch. Yoder Company in Cleveland makes it.

A coil is rolled into a cage, partially submerged in the pickling acid, and the cage is revolved at about 20 rpm. The rolling action unwinds the coil until it lies against the outer wall of the cage. Rotating direction is then reversed to rewind the coil. The action is repeated as many times as necessary to permit the combination of flexing and acid action to remove the scale. The cage and coil are then transferred in turn to a rinse tank and an oiling tank and the unwinding and rewinding operations are repeated. About three cage loads of 14-in. strip, 2,500 lb. each, can be pickled, rinsed and oiled in 1 hour.

Identify as IEN - 13791

No water can enter the vacuum blower and motor on the Multi-Clean Products vacuum floor cleaner even though the user fails to empty the collection tank when it has filled. Two electrodes are mounted just below the blower intake. A single drop of water crossing them on the way into the blower will open the motor circuit and stop the machine. After that the motor will not start again until the tank has been emptied and the electrodes dried, the filter drained and the motor switch turned off and on again.

Identify as IEN - 13792

Bakelite tells us about two circular chart calculators, made of Vinylite rigid plastic sheet, to quickly figure the date for

any given number of weeks in advance or the volume of a package from its dimensions in inches. Two sizes for date calculating are 4 and 8 inches. Prices are $1.50 and $3.85. The volume calculator lists at $3.85 in the one 8-in. size. All three are made by Graphic Calculator Company in Chicago.

If you write maker identify as IEN - 13793

The New 50 oz. BIG BULLY AIR HAMMER

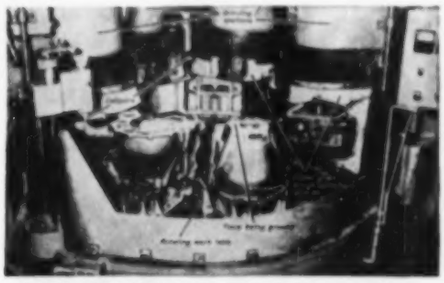
On foundry and metal working operations too heavy for the Bantam Bully use the new Big Bully. It offers you compactness plus the powerful results necessary on difficult foundry chipping, heavy weld scaling, chiseling and routing, gouging and grooving, cutting and star drilling and many other tough jobs.

The Big Bully is a precision tool 6" long, delivering 9000 sharp blows per second from 6.5 C.F.M. of air. Its exclusive trigger metering control provides complete regulation from a feather weight touch to a hard blow.

Write today for full details on the Big Bully, Bantam Bully, Bully Blow Gun and the Bully Fulflo Air Filter.

SUPERIOR PNEUMATIC & MFG. CO.
4758 WARNER RD. • CLEVELAND 25, OHIO

If you write maker identify as IEN - 13794



ON GUARD To Speed Production

Fullergript Brushes on Vertical Surface Grinder Keep Work Cleaner . . . Increase Safety and Accuracy

Above, you see Fullergript brushes used as splash guards on a vertical surface grinder to keep the coolant on the work . . . away from the operator. The brush filter is dense enough to confine the coolant, yet flexible enough so that the work passes easily under the guard. The result is increased production — cleaner, more accurate work and no labor problem.

Do these applications suggest new cost-reducing ideas to you? Our engineers will be glad to work with you. Just send us your problem, giving as much pertinent data as possible.

Industrial Fuller Division — *At home... in business, too*

THE FULLER BRUSH CO., INDUSTRIAL DIV., 3583 MAIN ST., HARTFORD 7, CONN.
Wet and Dry Mops, Brooms, Waxes and Polishes, Floor and Special Brushes

If you write maker identify as IEN - 13795

Globe OiLIFT Elevators

Speed Movement of Materials Between Floors . . . Cut Costs, Too!

Automatic leveling, one time-saving feature of Globe OiLIFT Elevators, is especially valuable where materials are conveyed on monorails—loading and unloading is speeded because monorails inside and outside the elevator match quickly.

A Globe OiLIFT Elevator costs less to install and operate. The cost of maintenance is so low compared to cable-types that over a period of 30 years more than the original cost is saved. Ascent is powered by hydraulic power; descent is gravity, actuated through the hydraulic system.

GIVE YOUR BUSINESS A LIFT!

Are you looking for a modern, dependable, low-cost elevator . . . freight or passenger type . . . easy and economical to install in a new or existing building? Write today for literature giving illustrated specifications on Globe OiLIFT elevator installations in factories, stores, apartments, hospitals, etc. Ask for Bulletin IE420.

GLOBE HOIST COMPANY • 1000 E. Mermaid Lane, Phila. 18, Pa.
Factories at Des Moines, Iowa, and Philadelphia, Pa.

If you write maker identify as IEN - 13796

Reduce Engine Maintenance With...

"HAYNES STELLITE" ALLOY Trade-Mark **VALVE SEAT INSERTS**

Over 170,000 miles of trouble-free service are usually given by HAYNES STELLITE alloy valve seats in diesel engines for buses and trucks. In gasoline engines, too, these alloy seats have phenomenal life between valve grinds.

The reason HAYNES STELLITE alloy valve seat inserts give such superior service is that they are made of a hard (Rockwell C51-54), cobalt-base alloy. The seats have excellent resistance to heat, corrosion, and erosion. They provide a tight valve fit long after ordinary seats have to be reground to prevent loss of power and waste of fuel.

For further information about HAYNES STELLITE alloy valve seat inserts and for prices, get in touch with our general offices in Kokomo, Indiana.

Haynes Stellite Company
A Division of Union Carbide and Carbon Corporation
UCC
General Offices and Plant: Kokomo, Indiana

"Haynes Stellite" is a trademark of Union Carbide and Carbon Corporation.

If you write maker identify as IEN - 13797

MINNESOTA

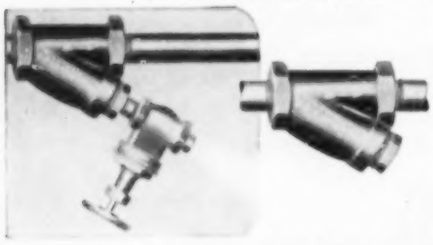
the O-ring with the FORMULA for strength, accuracy and uniformity

INJECTION MOLDED Minnesota O-rings meet specific requirements for hydraulic seals with close tolerances and without flash or trim. They function in air, gas or hydraulic systems including cylinders, hydraulic valves, water pumps, hoisting mechanisms, hydraulic brakes, bottling machines and engines. *Write for the O-Ring Bulletin.*

Also manufacturers of U and V seals . . . grommets . . . washers . . . and small parts made of rubber and synthetics including silicone, thiokol and saran.

MINNESOTA RUBBER & GASKET COMPANY
3630 WOODDALE AVENUE • MINNEAPOLIS 16, MINN.

If you write maker identify as IEN - 13798



a long time between BLOWDOWNS with ANDERSON STRAINERS

Anderson designs their pipeline strainers to give you the longest possible time between blowdowns or cleanings. A specially designed stainless steel mesh screen has a larger free area than ordinary metal screens . . . gives the strainer a larger dirt capacity. Standardize on longer-lasting Anderson Strainers. Protect your vital pumps, valves, regulators and steam traps. See your industrial distributor today.

THE V. D. ANDERSON COMPANY
1931 West 96th St. • Cleveland 2, Ohio
Write for Anderson Strainer Bulletin 252

Anderson STRAINERS

If you write maker identify as IEN - 13799

FLOOR AND SUSPENDED TYPES

SPOT HEAT WHERE MEN WORK . . . with MECHANIZED GAS UNIT HEATING

Install REZNOR WORLD'S LARGEST-SELLING Automatic GAS UNIT HEATER

Reznor unit heaters need only gas and electric supply plus flue exhaust arrangement for complete automatic operation. You can provide heat in winter and circulated air in summer to give employees the comfort they need to produce more efficiently. Because each unit produces and distributes heat where and when you want it, and installs so easily, you have flexibility to follow shop rearrangement with low-cost heating arrangement. For modern heating of new construction, expansion or remodeling specify Reznor unit heating. Reznors install economically in any size area.

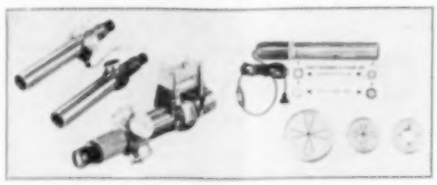
REZNOR MANUFACTURING CO.
10 UNION ST. . . MERCER, PENNA.
Send me 20-page catalog in full color

Name _____
Firm _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 13800

LAYOUT . . Telescope for squareness and point alignment

Source: ENGIS EQUIPMENT CO.
429-33 S. Dearborn St., Chicago 5, Ill.



A precision optical instrument

Accuracy is within 0.001 in. over distances of 18 in. to 150 ft. in checking point alignment with this new Micro-Alignment telescope. The new unit is available with built-in auto-reflection. It employs a hardened, ground and chromium-plated steel barrel measuring 2¼ in. in diameter. Magnification can be specified at 30X or 45X. Built-in micrometers can be supplied to check alignment.

A tube is supplied for precise point and tilt alignment. It consists of a hardened, ground and chromium-plated barrel of the same diameter as the telescope. It mounts two built-in targets on 10-in. centers. Perfect alignment is established between tube and telescope when both targets appear aligned in the telescope. An illuminator is attached to the tube to light the targets. Accessories include collimators, mounting spheres, target rotators, optical squares, stride level, glass targets.

If you write maker identify as IEN - 13801

LIGHTING . . Overhead fixture, disconnect design for ground servicing

Source: THOMPSON ELECTRIC CO.
1139 Power Ave., Cleveland 14, Ohio

For beam suspension

Type AL-8700 is a new three lamp cluster suspension fixture that has been added to the company's line of disconnect equipment. The fixture is made of aluminum with three ½ in. tubes to support individual light sockets. The central junction box is fitted with a ⅜-in. pipe thread and locking set screw to secure it in place.

Application is in connection with the company's 4-pole disconnect and lowering hanger with which the complete unit can be brought down to ground level for servicing. The fixture will support three luminaires of not more than 10 lb. each.

Identify as IEN - 13802

Pocket booklet welcomes visitors to the Ashland, Ohio plant of F. E. Myers & Brother. It contains thumb sketches of the company products, a bit of history on the company and the town, a map of the town with points of interest and principal roads and a list of the company's personnel with their titles.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13803

FAWICK ROTORSEALS
Performance Proved in
THOUSANDS OF INSTALLATIONS

Machine problems requiring transmission of air or liquids from stationary to rotating machine members are best solved with FAWICK ROTORSEALS.

Precision ROTORSEALS are available in single and multiple passage units, insuring dependable sealing of air, liquids or gases under pressure. They are equally effective in vacuum applications and may be operated continuously or intermittently in either direction.

FAWICK AIRFLEX CO., INC.
9919 CLINTON ROAD • CLEVELAND 11, OHIO

For complete information on a FAWICK ROTORSEAL to suit your specific application, write to the Home Office, Cleveland, Ohio

FAWICK Airflex
INDUSTRIAL CLUTCHES AND BRAKES

If you write maker identify as IEN - 13804

THE RAYONIC®
CATHODE RAY TUBES
BY WATERMAN

3SP

Since the introduction of Waterman RAYONIC 3MP1 Tube for miniaturized Oscilloscopes, Waterman has developed a rectangular Tube for multi-trace oscilloscopy. Identified as the Waterman RAYONIC 3SP, it is available in P1, P2, P7 and P11 screen phosphors. The face of the Tube is 1½" x 3" and the over-all length is 9½". Its unique design permits two 3SP Tubes to occupy the same space as a single 3" round tube, a feature which is utilized in the S-15-A TWIN-TUBE POCKETSCOPE. On a standard 19" relay rack, it is possible to mount up to ten 3SP tubes with sufficient clearances for rack requirements. Thus 3SP RAYONIC tube is ideal for multitrace oscilloscope work.!

WATERMAN PRODUCTS CO., INC. PHILADELPHIA 23, PA.
CABLE ADDRESS: POKETSCOPE

WATERMAN PRODUCTS INCLUDE:
3JP1 & 3JP7 JAN RAYONIC CR TUBES
3JP2 & 3JP11 RAYONIC CR TUBES
3MP7 & 3MP11 RAYONIC CR TUBES
3RP1, 2, 7, 11 RAYONIC CR TUBES
Also POCKETSCOPES, PULSESCOPES, RABSCOPES and other equipment

WATERMAN PRODUCTS

If you write maker identify as IEN - 13805

NOW...

full qualification approval,

MIL-M-10304 U.S. Signal Corps

--Ruggedized Meters

Weston Ruggedized Instruments (Model 1521 Class 52—300 microamperes through 8 milliamperes d-c inclusive) have received full qualification approval from the U. S. Signal Corps under specification MIL-M-10304. For full information contact your local Weston representative or write: Weston Electrical Instrument Corporation, 617 Frelinghuysen Avenue, Newark 5, New Jersey.

WESTON

Ruggedized Instruments

If you write maker identify as IEN - 13807

TINY but MIGHTY!

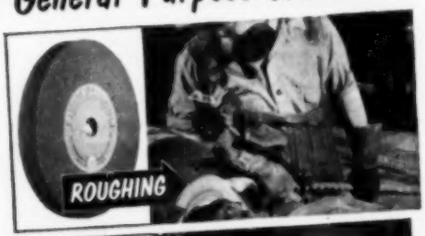
SKINNER STAINLESS STEEL SOLENOID VALVES

. . . Another case of "a good thing in a small package"! Users are amazed at the ruggedness and unusually large capacity of Skinner Valves—they're tiny but mighty, with a standard range for gaseous or liquid media from 5 to 250 p.s.i., and special from 5 to 850 p.s.i. Their soft insert seat prevents leakage and positive action is assured by spring loading. Skinner Valves may be used in any position, with pipe connections furnished to suit specifications. Power consumption is 10 watts max. Special coils for high humidity or high temperature applications can be supplied. Standard models are approved by Underwriters' Laboratories. *Write for Bulletin No. 501.*

SKINNER ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY
134 Belden Ave., Norwalk, Conn.

If you write maker identify as IEN - 13808

General Purpose Wheels . . .



General Purpose Wheels by CARBORUNDUM give you the widest possible range of abrasive tool versatility. Furnished in standard sizes for every known make of grinding machine, they improve the quality and quantity of work from veteran and inexperienced operators alike. In the cool cutting, long lasting V30 bond developed especially for general purpose work, "ALOXITE" aluminum oxide wheels are outstanding performers. They give you the ideal combination of abrasive grain, bond, grade and structure which provide highest grinding performance at lowest total cost.

This "tell-all" booklet is FREE!

ORDER FROM YOUR CARBORUNDUM DISTRIBUTOR TODAY. He's your best bet for complete stocks, prompt delivery, experienced counsel on latest developments in the field. You'll find him listed in the yellow pages under "Abrasives." Phone him today—it's to your profit!

THE CARBORUNDUM COMPANY, Dept. IEN 81-81
Niagara Falls, New York
Please send me, FREE, your booklet, "Causes and Corrections of Common Grinding Errors."

NAME AND TITLE
COMPANY
STREET AND NUMBER
CITY ZONE STATE

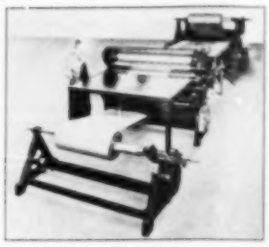
Only CARBORUNDUM TRADE MARK
offers ALL abrasive products . . . to give you the proper ONE

"Carborundum" and "Aloxite" are registered trademarks which indicate manufacture by The Carborundum Company, Niagara Falls, New York.

If you write maker identify as IEN - 13810

PROCESSING . . Laminating machine for leather, paper, plastics, metals

Source: POTDEVIN MACHINE CO.
283-87 North St., Teterboro, N. J.



Two into one

Two sheets of material feed into this new laminating machine from supply rolls. One is coated with adhesive to combine with the other which feeds in to lie smoothly on the coated side. The machine will take material to 50 in. in width. It measures about 22 by 6 by 7 feet. The two unwind stands will handle rolls of materials to 40 in. in diameter. A heater can be provided when hot glues are required in the laminating operation. The action is continuous under automatic control.

If you write maker identify as IEN - 13811

MARKING . . Etching fluid applies with rubber stamp on steel

Source: PHILLIPS PROCESS CO.
198 Mill St., Rochester 4, N. Y.

Applies also with a pen

New **chemical fluid** has been developed by the company for use in a rubber stamp pad. It makes a black marking on steel when it is applied from the pad by means of a rubber stamp. The marking is permanent and will not rub off in handling. It is not affected by contact with solvents or other fluids.

Packaging is in ounce dropper bottles and in larger sizes to one gallon. The company can supply a stamp pad, or any ordinary one can be used.

If you write maker identify as IEN - 13812

HEATING . . Diesel water equipment to warm and circulate jacket water

Source: VAPOR HEATING CORP.
4503 W. 16th St., Chicago 23, Ill.

Holds about 160 deg. F.

Electric element, enclosing tank, motor driven circulating pump and the required controls make up this new electric heater for the jacket water in a diesel engine. Connection is made into the engine's water circuit to maintain circulation when the engine is idle or while it is operating on very cold days. The electric element connects to a suitable source for 220/440-volt ac. Two sizes rate 75,000 and 120,000 btu. per hour. Overall dimensions are about 16 by 28 by 47 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13813

SPEED HAND-LABELING ON HARD-TO-LABEL JOBS with Mystik Self-Stik LABELS

SPEED PRODUCTION—No moistening. Stick instantly.

EASY APPLICATION on hard-to-reach, hard-to-label surfaces.

FLEXIBLE and stretchable for curved or uneven surfaces.

PERMANENT—Resistant to stain, moisture, scuffing, delamination. Removable, if desired, without staining.

BEAUTIFUL—Finest color printing; die-cut; embossed; varnished or acetate laminated.

The outstanding qualities of MYSTIK LABELS are due to rubber-saturated stock and the strongly bonded rubber adhesive, providing strength, flexibility, toughness, strong adhesion and ease of handling. Write for full information and samples.

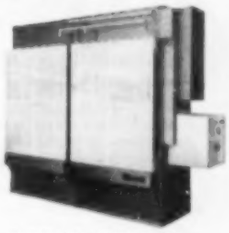
CHICAGO SHOW PRINTING COMPANY
CHICAGO • NEW YORK

2644 NORTH KILDARE • CHICAGO 39

If you write maker identify as IEN - 13814

50 MILLION CFM of Super-Clean Air . . . by Electro-MATIC

ELECTRO-MATIC* electronic precipitators now installed in the U.S. furnish this huge volume of super-clean air for industry, business, public buildings and institutions. Widely recognized for superior performance and economical maintenance, AAF's ELECTRO-MATIC provides highest efficiency collection (from smoke to largest air-borne material) . . . combined with fully automatic operation and self-cleaning features. Unit construction in many sizes readily adapts this filter to most air volume requirements. Request full information from your nearby AAF representative or write for Engineering Bulletin No. 250-E.



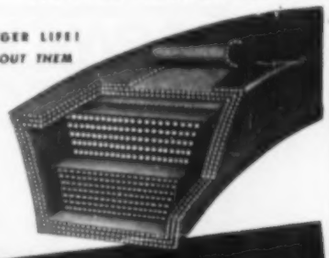
*ELECTRO-MATIC Automatic electronic precipitator.

"Industrial Black Lung Bulletin Board"

American Air Filter COMPANY, INC.
335 Central Ave., Louisville 8, Ky. • American Air Filter of Canada, Ltd., Montreal, P. Q. • Pacific Division Office, San Francisco, Cal.

If you write maker identify as IEN - 13815

FOR LONGER LIFE! —ASK ABOUT THEM



DODGE SEALED-LIFE V-BELTS

● The life is sealed in! Special cover protects tension members — insures *longer belt life.* Dodge Sealed-Life V-Belts are factory matched to TAPER-LOCK Sheaves for best performance. Stocked by Dodge Distributors. Write us for complete details.

DODGE MANUFACTURING CORPORATION, 600 Union St., Mishawaka, Ind.

DODGE of Mishawaka, Ind.

FIRST IN POWER TRANSMISSION MACHINERY

If you write maker identify as IEN - 13816

Fewer Parts make easy assembly

Simple construction, fewer parts make assembly and disassembly easy — also mean longer life.

CURTIS UNIVERSAL JOINTS

Simple construction is not the whole story. A combination of modern design, wise choice of alloy steels, with a special heat treatment for each part, give greater strength with less weight. And you can depend on Curtis catalog ratings — they are based on hundreds of actual tests.

ONLY CURTIS OFFERS ALL THESE ADVANTAGES

Availability — 14 sizes always in stock.
Simplicity — fewer parts, simpler construction.
Government Tests — complete equipment for government tests in our plant.

Write today for free engineering data and price list

CURTIS UNIVERSAL JOINT CO., INC.
7 Birnie Ave. Springfield, Mass.
As near to you as your telephone

A MANUFACTURER OF UNIVERSAL JOINTS SINCE 1919

If you write maker identify as IEN - 13817

here's a dependable source for aluminum extrusions

• This pioneer in the aluminum extrusion business can furnish your extrusions in quantity and deliver on time. Send prints or sketches for prompt quotation. Buy your aluminum extrusions from the Big Name in the business.

USE THIS SPACE TO INDICATE EXTRUSIONS YOU NEED

MAIL TO YOUNGSTOWN MANUFACTURING FOR PRICES AND DELIVERY

Buy from the BIG NAME in the Aluminum Extrusion Business

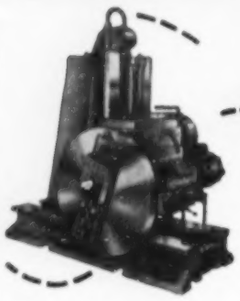
SUPERIOR ALUMINUM EXTRUSIONS

YOUNGSTOWN MANUFACTURING, INC.
66-76 S. Prospect St.
Youngstown 6, Ohio

If you write maker identify as IEN - 13818

FORNEY

BORING and FACING MACHINE



★ Boring
★ Facing
★ Milling
★ Tapping
★ Drilling

WRITE FOR NEW BULLETIN

Designed to eliminate conventional overhang for necessary bar travel providing greater resistance to bending stresses when boring — greater rigidity when milling — increased capacity when facing. Numerous applications can be made in boring, facing, drilling, tapping and milling. Duplicator attachments available. Standard model weighs 10,000 pounds.

FORNEY'S INCORPORATED
Manufacturers of Special Machinery Since 1916
ELM ST. NEW CASTLE, PENNSYLVANIA

If you write maker identify as IEN - 13819

SCREENS . . . STRAINERS

TO YOUR SPECIFICATIONS

MADE BY

Specialists

We are SPECIALISTS. Our business, our only business is fabricating screens and strainers. By specializing we have assembled highly productive facilities, skilled technicians and engineers resulting in great production improvements and economies.

FABRICATION SERVICES

• Shearing	Soldering •
• Brazing	Welding •
• Crimping	Plating •
• Stamping	

PITTSFIELD ENGINEERS will design a screen or strainer to meet the exact requirements for particle retention, flow capacity, limiting dimensions, of your product. Send specs plus rough sketch for FREE quotation.

SEND FREE LITERATURE

Our problem is mainly:

Mr. ..... Firm .....
Street ..... City ..... State .....

PITTSFIELD PRODUCTS, Inc.
ANN ARBOR MICHIGAN

If you write maker identify as IEN - 13820

CLEANING . . Brush for steel strip is rotated and also is reciprocated

Source: OSBORN MFG. CO.
5403 Hamilton Ave., Cleveland 14, Ohio

Built to order

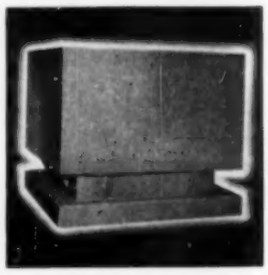
The company has developed a new self-contained mounting for its heavy duty cylindrical wire brushes, such as those employed in removing scale and dirt from steel strip while the strip is in action. The assembly includes a support frame that encloses the brush except for the upper active portion and mounts it in ball or roller bearing pillar blocks with provision for drive connection.

The frame rides on wheels on a support stand so it can be reciprocated across the work in order not to wear grooves in the brush surface or tracks on the work. Each assembly is available to specification for a given job. The unit shown mounts a 600-lb. brush and weighs 1,600 pounds.

If you write maker identify as IEN - 13821

VENTILATING . . Power exhauster discharges bad air, fumes through roof

Source: HARTZELL PROPELLER FAN CO.
1023-27 Roosevelt Road, Piqua, Ohio



Excellent for foundries

Inside the rectangular housing of this new Air-Jet ventilator is a vertically mounted motor driven propeller type fan. It rotates in the ventilator throat beneath a pair of hinged covers. When the fan is idle, these covers shed rain to the outside. They are opened by the air stream, when the motor is started.

The covers are made of aluminum. The outer housing is galvanized copper bearing steel. Nine sizes in the line employ fans measuring 24 to 60 in. in diameter. Width and depth of the housing is 38 to 78 inches. Weight ranges from 155 to 575 pounds without the fan or motor.

Identify as IEN - 13822

Characteristics covering construction, operation and maintenance of fork lift trucks can be compared between two similar makes of truck with the aid of a new chart. It is available without charge from Lewis-Shepard Products in Watertown, Mass.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 86

If you write maker identify as IEN - 13823

DEPENDABLE ACCURATE CONTROL OF PROCESS EQUIPMENT WITH THE NEW... *Bell Switch* CONTROL

HERE is help for liquid level control problems. The new Bell Switch Control incorporates a snap-action magnetic proximity switch which is actuated by a float operated magnetic armature. Gives you accurate control and automatic cutoff of such equipment as limit controls, scrubbers, separators and also can furnish high and low stage alarms. Especially suitable for use with highly corrosive fluids. There is virtually no liquid level control problem that can't be solved with this dependable, low maintenance Bell Switch Control. A number of standard and special mounting styles available to meet particular requirements.

- ✓ No Packing Boxes, Bellows or Diaphragms to worry over and replace
- ✓ Rugged Spun Steel Body
- ✓ Eliminates False Action due to Turbulence
- ✓ Standard or Explosion Proof Cover Available
- ✓ Mechanism Completely Isolated from Corrosive Fluids
- ✓ Switch Rating: 10 amps. at 110 volts; 5 amps. at 220 volts, A.C. Direct loads to ½ h.p. A.C. ratings

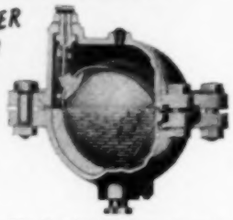
WRITE TODAY FOR COMPLETE DESCRIPTIVE LITERATURE

JO-BELL PRODUCTS, INCORPORATED
4840 So. St. Louis Ave. • Chicago 32, Illinois
Liquid Level Controls • Carburetors • Magnetic Switches • Special Controls

If you write maker identify as IEN - 13824

GET RID OF AIR ACCUMULATIONS IN PIPE LINES...

A BIG TROUBLE SAVER THAT COSTS YOU LITTLE!



When air lodges at high spots in pipe lines, it reduces the effective area of the pipe, creates a friction head, lowers pumping capacity, and may result in serious water hammer!

Simplex Air Release Valves bring you a sure, efficient cure for these difficulties . . . venting air *automatically* before it can cause damage.

The Simplex Air Valve is easily installed . . . positive in action . . . ample in capacity. Standard valves for pressures up to 250 p.s.i. . . . special valves for pressures up to 800 p.s.i. Thousands have been in successful use for over 50 years.

IT'S SIMPLEX IT'S ACCURATE

Write for free bulletin to Simplex Valve & Meter Co., Dept. 7, 6717 Upland Street, Philadelphia 42, Pa.

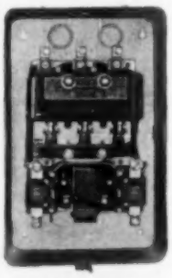
SIMPLEX
VALVE AND METER COMPANY

If you write maker identify as IEN - 13825

CLARK type "CY" AC MAGNETIC MOTOR STARTER

Now Available in SIZE 3

Now you can get this revolutionary starter in sizes 0, 1, 2 and 3. The size 3 uses the same new principle of arc interruption—with magnetic blowouts and twin-break contacts—which has proven so successful in size 2 . . . It provides the extra protection and dependable operation of Mill-type, heavy-duty construction. Many built-in features mean better performance. Designed to reduce maintenance costs to an absolute minimum. Contact surfaces can be quickly inspected without tools. Contacts are easily and quickly replaced without removing starter from cabinet. All parts are accessible and removable from the front.



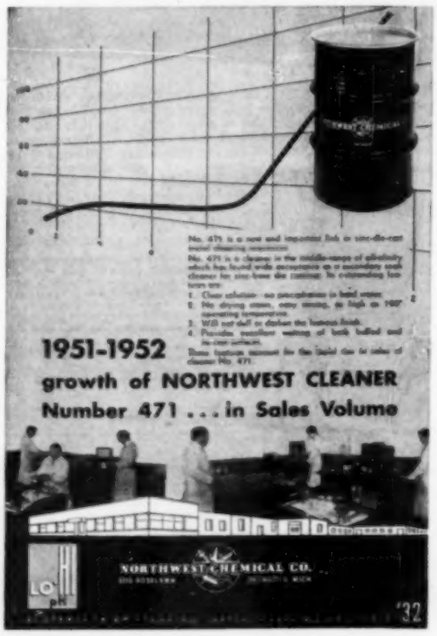
Clark Bulletin 6013 Type "CY" AC Magnetic Starter, Size 3 with NEMA 1 Cabinet,-cover removed. Note clean design with plenty of wiring space.

CLARK Type "CY" AC Magnetic Starters are available in a wide variety of sizes, types of cabinets, and combinations of devices.

Write for information.

THE CLARK CONTROLLER CO.
ENGINEERED ELECTRICAL CONTROL • 1146 EAST 152ND STREET, CLEVELAND 10, OHIO

If you write maker identify as IEN - 13826



If you write maker identify as IEN - 13827

Special cold headed products

. . . nails • rivets • screws . . . made to order

. . . and to your specifications in any metal. Large raw material inventory for your convenience. Send drawing—advise quantity. *Free catalog on request.*

JOHN HASSALL INC.
132 Clay Street Brooklyn 22, New York

If you write maker identify as IEN - 13828

9 design problems that can be met with the

ALLENUT

Ever-increasing applications for the new ALLENUT have caused sales to double within the past two years. Here are some of the things it can do to aid your product designing:

1. Self-Anchoring In Any Metal. Allenut provides positive anchoring action through its hardened knurls.

2. Compact Design. Requires no space or box wrenching. 12-point socket permits tightening in awkward places.

3. Smooth Surfaces. Fits flush or below surface in counterbored hole . . . permits streamlined, safe surfaces.

4. A Ready-Made, Hardened, Tapped Hole. When used as a bushing, prevents costly stripping of threads caused by frequent removal and replacement of screw or bolt. In castings and other soft metals a stripped hole can be counterbored, an Allenut inserted and the same bolt or screw used.

5. Tighter Fit. Greater thread contact than with ordinary nuts because of Class 3 fit. Weld-like setups accomplished with one hand wrenching. Allenut holds firm against turn of screw.

6. Usable With Any Type Bolt Or Screw. Permits space-saving, internal wrenching of cap screws, T bolts, machine bolts, and other common fasteners.

7. Saves Parts. No washers required when anchored.

8. Easier To Use. Knurled ring facilitates fingering-in. Allenut is always square to counterbored hole. Removable by hitting screw or bolt head with tap of a hammer.

9. Reusable Indefinitely. Anchoring action remains unimpaired. Hardened threads and socket stand up under repeated removal and replacement.

Allenuts are available in a full range of 14 standard sizes from No. 4 to 1" from leading industrial distributors.

We welcome your inquiry and request for engineering details on Allenut applications.

ALLEN
MANUFACTURING COMPANY
Hartford 2, Connecticut, U. S. A.

If you write maker identify as IEN - 13830

CAPACITOR . . Tubular oil filled, hermetically sealed, stud mounting

Source: INDUSTRIAL CONDENSER CORP.
3265 No. California Ave., Chicago 18, Ill.

Ask for Catalog 1134

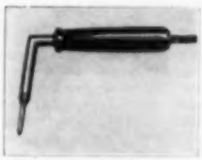
Twelve ratings, between 0.5 mfd. on 1,500 volt dc. and 8 mfd. on 600-volt dc., are available in a G Series in the company's recently expanded line of oil filled capacitors. Three additional units, each dual design, rate 0.5 and 0.5 mfd. at 600 and 1,000 volts and 1 mfd. at 600 volts. Standard construction includes filling with the company's Indco oil for operation in a temperature range between minus 40 and plus 70 deg. C. Piroteen can be specified for a range between minus 70 and plus 90 deg. C.

Diameters range from 1⅝ to 2 inches. Height is 2⅞ to 4½ inches. The molded mounting neck is locked in the capacitor and is gasketed. The capacitor case is insulated from the terminals in standard construction. Solid nuts and lockwashers are provided for mounting.

If you write maker identify as IEN - 13831

SOLDERING . . Electric iron mounts 1/4 inch light duty plug tip

Source: AMERICAN ELECTRICAL HEATER CO.
6108-12 Cass Ave., Detroit 2, Mich.



An American Beauty

The angle shape of this new No. 3128-A soldering iron permits access into locations difficult to reach with the company's previously developed straight No. 3128 iron. The new unit employs the same ¼-in. plug tip and is rated at 60-watt input. It can be specified for operation on 110, 220 or 32 volts. A separate heat insulating stand is provided. Weight is 10 ounces.

If you write maker identify as IEN - 13832

ROPE . . Measured hanks each containing a 35 foot rope length

Source: NEW BEDFORD CORDAGE CO.
P. O. Box 714-A, New Bedford, Mass.

To cut at bands

Handi-Hanks is the trade name for new packaging of the company's manila rope in ¼, ⅜ and ½-in. sizes. Twenty, sixteen or six hanks are packed in a carton depending on the rope size. All are coiled from a single piece of rope and are banded at 35 ft. lengths. A section of the band on each side of a cut prevents the rope from unravelling. One size carton is employed for the three rope sizes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13833

If you write maker identify as IEN - 13834

FLAT SPRING STEEL

Roebling's expanded facilities can meet your needs right now!

NOW YOU CAN GET fast deliveries of Roebling high carbon flat mechanical spring steel – expanded facilities have boosted production to new highs. And Roebling flat spring steel comes as you want it – annealed, hard rolled untempered, scaleless tempered, tempered and polished, blued or strawed. Uniform quality saves preparation time for users; brings faster, smoother production . . . Write for full information. John A. Roebling's Sons Company, Trenton 2, New Jersey.

ROEBLING

If you write maker identify as IEN - 13835

This plunger for commercial orange juice squeezer is molded from **BAKELITE General-Purpose Phenolic BM-93.** Strong, smooth, easily cleaned, it is also resistant to action of citric acid. Made for Turbo Machine Co., Landsdale, Pa., by Plastic Fabricators Inc., Fernwood, Pa.

Slide file drawers are molded from **BAKELITE General-Purpose Phenolic BM-14660,** which offers these advantages: easy flow for deep-draw molding, rich brown mottled finish, and dimensional stability. Molded for Burnett & Jaffe, Phila., Pa., By Anrob Mfg. Co., Phila., Pa.

Electrical resistivity, fine smooth finish, and low cost are all combined in this household panel board circuit breaker. It's readily and rapidly molded from black **BAKELITE General-Purpose Phenolic BM-2498.** Made for Heinemann Electric Co., Trenton, N. J., by Kuhn & Jacob Molding & Tool Co., Trenton, N. J.

This loading port ring for automatic clothes dryer stays smooth—won't snag clothes. Made from **BAKELITE Improved-Impact Phenolic BM-6260,** it resists soap and detergents, heat, and impact in loading clothes. Made for Hamilton Mfg. Co., Two Rivers, Wis., by Chicago Molded Products Corp., Chicago, Ill.

Good reasons all— for selecting Phenolic Plastics!

If you're looking for impact strength, ease of molding, chemical resistance, or a combination of such qualities – try BAKELITE Phenolic Plastics!

The wide variety of BAKELITE Phenolic Plastics makes your selection easy. You can pick the plastic that's *right* for the job. And the examples above show how many *different* jobs phenolic plastics are finding today.

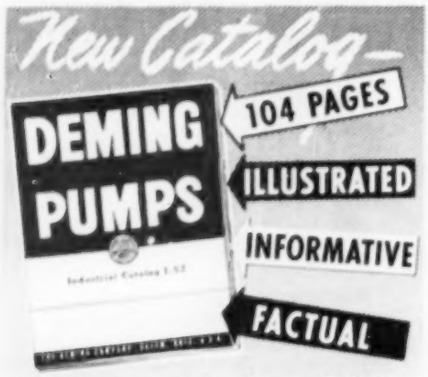
Make sure that your product is made from the best, most useful, most suitable molding material. Look into BAKELITE Phenolic Plastics for better design, performance, saleability. Our engineers will help you. Write Dept. EB-14.

BAKELITE
TRADE MARK
PHENOLIC PLASTICS

TRADE MARK

BAKELITE COMPANY
A Division of Union Carbide & Carbon Corporation
30 East 42nd Street, New York 17, N. Y.
In Canada:
Bakelite Company (Canada) Ltd., Belleville, Ont.

If you write maker identify as IEN - 13837



"Industrial Catalog I-52"

This new catalog simplifies the selection of the right pump for the job. Contents include illustrated details of design and construction, tables of sizes and capacities and related data on the numerous types of Deming Industrial Pumps. Write for your free copy of "Industrial Catalog I-52."

THE DEMING COMPANY
521 BROADWAY • SALEM, OHIO, U.S.A.

If you write maker identify as IEN - 13838

Light Where Light is Needed MOST

FOSTORIA LOCALITES
Help Your Workers See Better

Lights the Vital Seeing Zone

Machine Tools, Inspection and Assembly Benches

MODEL 3470-P-172
Overall length 48½". Three instantly adjustable joints. Circular base for machine or wood screw mounting.

$7.16 EACH
in pkg. of 6
Single Units $8.95 ea.

- **Rugged Construction** withstands vibration and rough handling
- **Instantly Adjustable** with flexible ball and socket joints
- **Baked Enamel Finish**—Exterior, Smooth Gray—Reflector Interior, high temperature White
- **Reflector** accommodates 100 watt or any A-19 or A-21 medium screw base lamp
- **Wired Complete** with switch socket and 8 ft. oil-resistant cord and moulded plug

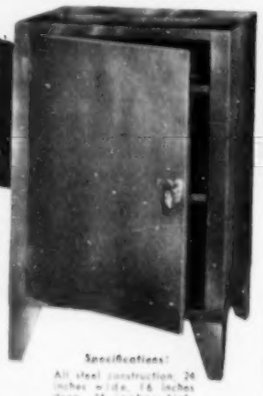
Write for Complete Catalog of Localite models with various type reflectors, arms and bases for every industrial use.

THE FOSTORIA PRESSED STEEL CORPORATION
FOSTORIA, OHIO
Localites are available through electrical wholesalers everywhere.

LOCALITE fostoria for Light ON the Job

If you write maker identify as IEN - 13839

ANGLE STEEL TOOL CABINET
Sturdy-Roomy-Convenient



For use in factories, tool rooms, production departments, factory offices. Essential for on-the-job use when tools and precision instruments are required. Steel top has turned-up edges for keeping tools and instruments from falling off. Single door has cylinder lock mounted in handle.

Specifications:
All steel construction. 24 inches wide, 16 inches deep, 34 inches high. 16 gauge steel top. Two adjustable shelves on 4 inch centers. Olive green finish. Shipped assembled.

Send for FREE Literature.

ANGLE STEEL, Inc.
Dept. 3 Plainwell, Michigan

Please send FREE Literature — We're interested in: Shop Desks, Benches, Stools, Tool Cabinets, Tool Stands

Company

My Name Title

Address

If you write maker identify as IEN - 13840

WELDING . . Plier type tool to butt weld wire by pressure only

Source: UTICA DROP FORGE & TOOL CORP.
2413-17 Whitesboro St., Utica 4, N. Y.

Pressure alone makes weld

Aluminum or copper wire to 0.07 in. in diameter applies in this new tool for butt welding by the Koldweld process, previously described IEN-10359-50. The wire ends are placed in position in the tool jaws and a lever handle on the right hand side is turned to position the wires correctly. Then the handles are squeezed together and released to complete the weld. Flash resulting in the action can be removed so the joint will be the same gage as the wires prior to welding.

The process originated in the laboratories of General Electric Company, Ltd. of England. Sole licensee in the United States is Koldweld Corporation with whom the company has made arrangements to supply equipment such as the tool shown.

If you write maker identify as IEN - 13841

ELEVATOR . . Portable design, electric hydraulic operation, ½ ton

Source: CENTURY PRODUCTS CO.
5927 Highway #7, Dept. KP, Minneapolis 16, Minn.

About $400

A 6 volt motor and charger equipped storage battery replace the hand operated hydraulic pump, previously described IEN-8729-52, on this new Century 1000-E portable elevator. It is a companion unit to the Century-1000 hand operated assembly. A load can be lifted to 48 in. above the floor in 15 sec. on the 23 by 24 in. platform. The platform is lowered by operating a small lever for controlled descent or for stopping at any intermediate position.

The elevator is mounted on solid wheels at the front and swivel type trailing wheels at the rear. It is moved by hand from one location to another. Overall height is 64 inches. Base area is 29 by 34 inches. Finish is a brilliant yellow-orange.

Identify as IEN - 13842

New weapon in the fight against high taxes has been set up by Warner Electric Brake and Clutch Company in Beloit, Wisconsin. The company has revised the record stub on its pay check so each employee is reminded not only of the tax he pays weekly but also of the accumulated total for the year.

Thus an employee who has $13 withheld in taxes in a single week is shown that he is paying $104 after eight weeks, $390 after thirty weeks, $676 for the year. Opening entry on the new stub says "wages paid". Last entry says, "wages left".

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13843

NEW pocket pyrometer
for direct readings up to 3300° F

Use it like a telescope to get accurate, dependable readings of hollow space radiation.

No complicated adjustments. Impossible for several observers to get different readings with this instrument.

Light, handy—can be carried in your pocket fully protected by a high-quality leather case.

Special measuring range from 1800° to 4300° F available on request.

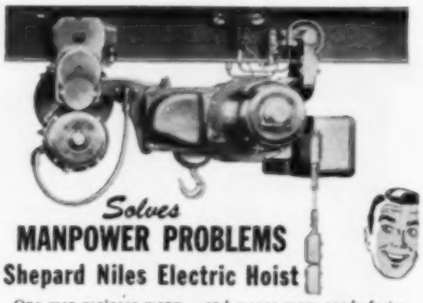
Write for literature and directions for use.

$95.80
DEL. U.S.A.

FERRO

Allied Engineering Division
FERRO CORPORATION
4177 East 56th Street • Cleveland 5, Ohio

If you write maker identify as IEN - 13844



Solves
MANPOWER PROBLEMS
Shepard Niles Electric Hoist

One man replaces many — and moves more goods faster — with a Shepard Niles Electric Hoist. These sturdy hoists free valuable floor space, put waste ceiling area to work, enable an older man, woman or youth to handle the heaviest loads with ease.

Learn how a Shepard Niles Hoist — in light, medium or heavy capacity — fits into your production picture. Call in the Shepard Niles representative — he'll make sure you get the right capacity and controls for your handling job. Write today for Bulletins 127 and 171 and ask to have a representative stop by.

- **HOISTS** Operated from Cab, Floor or Pulpit.
- **CRANES** Overhead: Top Running, Inner Running, Under Running, Floor or Cab Operated.

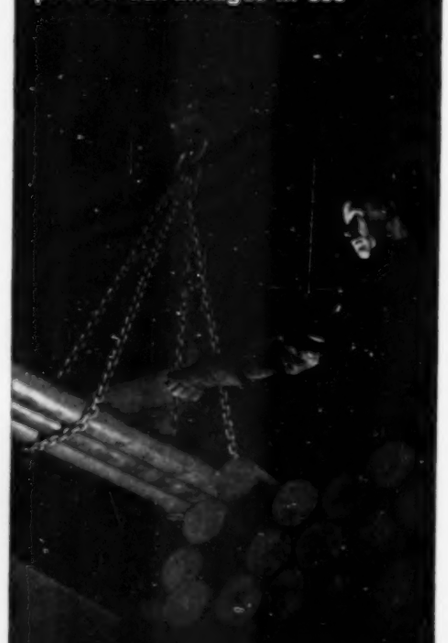
Specialists in loads through-the-air since 1903.

SHEPARD NILES
CRANE AND HOIST CORPORATION
1015 SCHUYLER AVENUE • MONTOUR FALLS, N. Y.

If you write maker identify as IEN - 13845

HERC-ALLOY SLING CHAINS

PREFERRED . . . because of proved advantages in use



Production Executives and Safety Directors look for many things in a sling chain—greatest strength, maximum safety, lighter weight, handling ease, resistance to wear, minimum cost against service life.

Because they found all these advantages in HERC-ALLOY by on-the-job experience, it became a matter of course to prefer and specify HERC-ALLOY Sling Chains.

Write for illustrated Data Book No. 3 which contains helpful information on sling chain selection and use.

COLUMBUS McKINNON CHAIN CORPORATION
(Affiliated with Chisholm-Moore Hoist Corp.)
GENERAL OFFICES AND FACTORIES: TONAWANDA, N. Y.
District Offices: New York • Chicago • Cleveland
Other Factories at Angola, N. Y., Dixon, Ill., St. Catharines, Ont., Can., and Johannesburg, South Africa.

If you write maker identify as IEN - 13847

...IN THE PRODUCTS YOU BUILD

Manufacturers-equip your products with the finest floats available—*Stainless Steel Floats* from Chicago Float Works. Your product can have no better assurance of long trouble-free float performance. You get all of the plus values of *Stainless Steel* along with Chicago Float Work's more than thirty years of specialized experience in engineering and building floats for industry.

....check these features

CORROSION RESISTANCE. *Stainless Steel* stands up better under severe services in many different kinds of corrosive fluids.

EXTREME STRENGTH. Will withstand pressures up 1000 lbs. Temperatures to 800° F.

LIGHTER. Less weight affords more buoyancy making for more positive float action.

COMPLETE LINE. Diameters 3 to 10 in. Special sizes to order—standard or special float connections. Write for catalog giving sizes, shapes, sped connections, and complete engineering data.

CHICAGO FLOAT WORKS, INC.
2326 S. Western Ave., Chicago 8, Illinois

If you write maker identify as IEN - 13848

lifts 1000 lbs.

at 20 feet a minute

- This latest CP AIR HOIST – with variable speed, rotary vane air motor – spots loads accurately, quickly; sets them down gently.
- New design, trouble-free throttle valve provides sensitive control from an almost imperceptible creep to full speed.
- Air motor cannot overheat – no shock hazard – no spark hazard – no switches to maintain.
- Self-locking worm gear provides automatic brake – no brake bands to adjust or replace.
- Weighing only 57 pounds, the CP AIR HOIST can readily be carried by millwright to any location.
- Furnished in 300, 500, 700 and 1000 pound capacities.

Write for a copy of Bulletin SP-3027

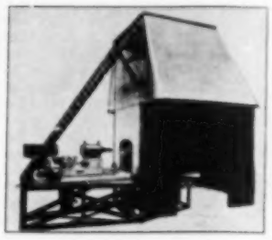
CHICAGO PNEUMATIC TOOL COMPANY
General Offices: 8 East 44th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

If you write maker identify as IEN - 13850

GAGE . . Optical comparator projects magnified work image, to 100X

Source: ENGIS EQUIPMENT CO.
429-33 S. Dearborn St., Chicago 5, Ill.



Checks work and tools

Two sets of precision optics and a horizontal screen, or viewing table measuring 60 in. in diameter, are assembled in this new Taylor-Hobson 200 in. profile projector. The equipment takes work to 3 in. in diameter with magnification between 20 and 100X for comparison of the profile outline with tracings or templates that can be mounted on the table. Magnification of 10X also is available for work to 6 in. in diameter. A curtain surrounds the table to shut out room light. The work mounts on an adjustable stage.

If you write maker identify as IEN - 13851

VENTILATING . . Centrifugal blower to handle fumes, smoke, sawdust

Source: STANDARD ELECTRIC MFG. CO.
951 Haddon Ave., West Berlin 12, N. J.

New blower rates 450 cfm. It is driven by a 1/6-hp. 110-volt single-phase ac. motor for operation at 3,450 rpm. Inlet measures 5½ in. in diameter. The outlet is 3½ inches. The blower employs an aluminum housing and the unit is intended for general duty in a plant.

If you write maker identify as IEN - 13852

SWITCH . . Sensitive snap-acting double throw, 15 amp. on 110 volt ac.

Source: SORENG MFG. CORP.
9565 Soreng Ave., Schiller Park, Ill.

No. 13150 is a new single pole double throw sensitive snap-acting switch for use in limiting, control, safety and interlock circuits. It operates on a maximum force of 10 oz., provides a maximum of ⅛ in. of plunger travel and 1/64 in. of pretravel. Silver contacts are operated by a bronze contact blade for instantaneous make and break action. Overall housing size is 1⅞ by ⅝ by ¾ in.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13853

REGISTER NOW FOR THE

4th Plant Maintenance Show and Conference

Cleveland

January 19-22, 1953

REMEMBER . . . it's the show for presidents, vice presidents, general managers, plant managers, plant engineers, maintenance engineers – and all other plant operating men whose responsibility it is to select, install, operate, and maintain the plant equipment and services that mean low-cost operation, high production.

AT THE SHOW . . . in one place, at one time, for your first-hand inspection and comparison – *more than 350 exhibitors of the machines, equipment, and services you need to maintain your plant at top operating efficiency.*

AT THE CONFERENCE . . . you'll meet maintenance specialists . . . you'll talk shop, in small group meetings, with men from other plants and other industries who have faced the same problems you face – and have learned how to solve them.

For free show tickets for yourself and members of your organization, write today to

CLAPP & POLIAK, Show Management
241 Madison Avenue, New York 17, N. Y.

If you write maker identify as IEN - 13854

ROLLED STEEL PIPE FLANGES

for all types of service

18" I. D. TO 144" O. D. CARBON, ALLOY OR STAINLESS STEEL

Inquiries Invited

STANDARD STEEL WORKS DIVISION
BURNHAM, PA.

BALDWIN-LIMA-HAMILTON

General Offices: Philadelphia 42, Pa. Offices in Principal Cities

If you write maker identify as IEN - 13855

The new M·S·A SHOCKGARD does a double protection job!

The only Safety Work Hat designed especially for Linemen and Electrical Construction Workers. *No metal* in shell or lining. Molded entirely of special thermoplastic, the Shockgard sets up an effective guard against a minimum of 10,000 volts, which holds at temperatures of 50 degrees below zero to plus 175 degrees F. High resistance to impact, penetration. Streamlined; lightweight; comfortable; easily adjusted lining. Winter lining and chin straps available. Bulletin 0601-1.

MINE SAFETY APPLIANCES COMPANY
Braddock, Thomas & Meade Sts.
Pittsburgh 8, Pennsylvania
At Your Service: 68 Branch Offices in the United States

If you write maker identify as IEN - 13856

Send for this folder on the WESTINGHOUSE "Z" AIR COMPRESSOR

designed for long, uninterrupted service

● If you're looking for an air compressor that's designed specifically for the day-after-day steady pull . . . for the jobs where you can't afford an air supply failure . . . get this folder describing the water-cooled Westinghouse "Z".

It tells you about the features that make possible uninterrupted operation and long service life . . . gives you complete data on ratings and dimensions of the models in this series.

Bulletin 9452-11 gives complete details on Westinghouse "Z" Air Compressors. For your copy, write to Westinghouse Air Brake Company, Industrial Products Division, Wilmerding, Pennsylvania.

WESTINGHOUSE
AIR BRAKE CO. WILMERDING, PA.
INDUSTRIAL PRODUCTS DIVISION

If you write maker identify as IEN - 13857

CAL-WIC WIRE CLOTH

meets all STANDARD and SPECIAL requirements

Either as original equipment or for specialized uses in filtering, screening, grading, cleaning or processing, Cal-Wic Wire Cloth is available in the right weave, mesh and weight to give you long-wearing, dependable service.

Made in different types of metals and alloys for high resistance to chemical action, corrosion, abrasion and temperature extremes.

For additional information write or phone our nearest sales office.

THE COLORADO FUEL & IRON CORPORATION – Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION – Oakland, California
WIREWIRE SPENCER STEEL DIVISION – Clinton, Massachusetts

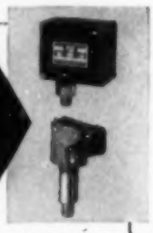
CAL-WIC CFI
INDUSTRIAL SCREENS
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as IEN - 13858

TYPE J7

RUGGED, COMPACT, INEXPENSIVE PRESSURE CONTROLS

TYPE J40



The Type J40 pressure control is a rugged, precision-built and inexpensive unit for use where light, compact and reliable controls, without head enclosures, may be used. It is used widely on industrial equipment, on aircraft and other engine applications. Complete specifications are covered in Bulletin #5-9. Write for one today.

The Type J7 is the most compact enclosed industrial pressure control offered by United Electric. It may be used for controlling gas, liquid or air pressure in applications where space and weight availability is a premium and where precise performance under rugged vibration conditions is a requisite. Bulletin #5-7 gives full details. Write for it today.

UNITED ELECTRIC CONTROLS COMPANY
80 School Street, Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

If you write maker identify as IEN - 13859

These are Hamilton Shallow-Drawer Units. They should be at work safeguarding the tremendous investment your tracings represent. You get an extra margin of protection in the Shallow-Drawer Unit's flat, *compressed* storage and in the action of the patented Tracing Lifter, which insures safe, simple removal and replacement of *any* drawing in each drawer.

If you are not yet using this better filing equipment, learn more about Shallow-Drawer Units. See your Hamilton Representative or write direct to—

DRAFTING EQUIPMENT DIVISION

Hamilton Manufacturing Company

TWO RIVERS, WISCONSIN

If you write maker identify as IEN - 13860

SEALING . . Molded V-type rings are made of neoprene fabric compound

Source: PERIPLEX INC.
111-15 E. 10-Mile Road, Hazel Park, Mich.

Ask for catalog

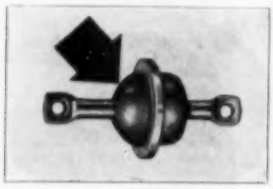
Number 88 designates a new V-type molded ring to seal pneumatic or hydraulic pressure. It is supplied in sets including a required number of pressure rings with a pressure-end male adapter and a follower-end female adapter. Single rings can be used with male and female adapters machined from metal by the user. Four pressure rings are supplied normally for service to 1,000 pounds. Seven are recommended for 5,000 lb. or more.

The rings can be solid or split. They require no gland pressure at the start to seal a reciprocating rod or piston if they are solid. A little gland pressure is needed when split rings are installed. Three cross sections measure ¼, 7/16 and ⅜ in. in stock diameters for rods from ½ to 3 inches. Corresponding outside diameters are 1 to 3½ in., 1⅛ to 3⅝ in., 1¼ to 3¾ in., in ⅛-in. steps.

If you write maker identify as IEN - 13861

CONNECTOR . . Electric terminal in plastic hermetic sealing assembly

Source: MELKOR RESEARCH LABORATORIES INC.
11740-44 Detroit Ave., Cleveland 7, Ohio



Melkorite terminal

New plastic material that will withstand continuous temperature to 390 deg. F. and is characterized by high dielectric strength has been developed by the company. It is employed as a sealing member in the new electric terminal shown in the illustration. Specifications for this terminal include dielectric strength of 8,000 volts and corona starting strength at 2,000 volts, both on 60 cycles.

Air pressure tests to 30 lb., terminal pull to 25 lb., and ability to withstand thermal cycling between minus 80 and plus 390 deg. F. Three terminal sizes assemble in 7/16, 7/16 and ⅝-in. mounting holes. Custom production will be available on special types for manufacturers of equipment requiring high temperature insulation combined with hermetic sealing.

identify as IEN - 13862

Friction and wear are minimized in a deep well pump housing by interior application of a coating of porcelain enamel. The resulting glass-like surface promotes flow, protects the cast iron against corrosion. It can be applied on equipment of your own, subject to extreme wear, by Barrows Porcelain Enamel Company.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13863

DIRT'S NO PROBLEM for the SKF "SAF" Pillow Block

The "SAF" Pillow Block is SKF's answer to dirt problems:

- triple-seal rings give three-fold protection in dirt-gathering locations; seal out foreign matter; seal in oil or grease; self-aligning.
- special stabilizing rings between housing shoulder insure fixed position of shaft in bearing during operation.
- types for light, normal and heavy duty.

Write SKF Industries, for complete details, or contact your SKF Distributor. **SKF INDUSTRIES, INC.**, PHILADELPHIA 32, PA. — *manufacturers of* **SKF** *and* HESS-BRIGHT *bearings.*

SKF BALL AND ROLLER BEARINGS

IN EVERY INDUSTRY, SKF Puts The Right Bearing In The Right Place

If you write maker identify as IEN - 13864

Shims stamped from LAMINUM® look like solid metal but actually are made up of layers of .002 or .003 inch brass or steel

when a shim is LAMINATED

here are your advantages:

REDUCED MACHINING COST: You machine only to easy tolerances. The laminated shim is *adjustable*—you simply peel laminations to get exactly the spacing you need.

SIMPLIFIED USE: Shims come to you in one "pack" for each application. They are precision-stamped to your exact specifications. No counting, no stacking, no miking.

SPEEDED PRODUCTION: Final fitting can be done right at the job. You don't have to take parts back and forth for further machining, grinding or filing.

ADDED SERVICE FEATURE: Throughout the life of the machines you produce, the simple removal of a shim lamination provides a unique adjustment for the take-up of wear.

LAMINUM
THE SOLID SHIM THAT [redacted] FOR ADJUSTMENT

LAMINATED SHIM COMPANY, Inc.
2112 UNION STREET GLENBROOK, CONN.

CUSTOM SHIMS STAMPINGS SHIM STOCK

If you write maker identify as IEN - 13865

Invests $150.00 Saves $2100.00

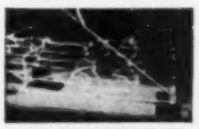
with this remarkable PARKER floor sweeper

Report from Plant X indicates way you can make substantial savings on YOUR floors

"Comparative studies on 71,256 sq. ft. of storage and shipping space yield clean-up times of eight hours against sixteen hours by the former method. In areas formerly swept by the pushbroom method the Parker sweeper yields still greater savings, some as high as 76%. An estimated $2,100 per year after taxes will be saved."

A Parker sweeper saves money, saves manpower *in any size plant* from large factory to small garage. Sweeps all type floors. Collects and sweeps in one operation. Easy to empty. *Write for full details.*

HERE'S WHY YOU SAVE FROM $10 TO $50 A WEEK



OLD PUSHBROOM METHOD
A flashlight mounted on a pushbroom vividly describes what happens when a workman uses a pushbroom. Time exposure shows change of direction. And the dirt must *still* be picked up.

PARKER SWEEPER METHOD
Continuous lines of light indicate continuous sweeping. Result: many more times the floor space swept in an hour's time. Furthermore, the dirt has been collected at the same time.

PARKER

INDUSTRIAL FLOOR SWEEPERS

Parker Sweeper Co.
36 Bechtle Ave., Springfield, Ohio

Motorized Model Parker Sweeper with 1 h.p. 4 cycle engine available for extra large, unobstructed areas.

If you write maker identify as IEN - 13867

If you write maker identify as IEN - 13868

Your *production methods* may be at the peak of efficiency . . . but how about your *cleaning methods?* Out of date floor cleaning equipment can affect your profit picture just as much as labor, material and taxes.

Tornado cleaning equipment is engineered to fulfill the needs of modern commercial and industrial cleaning. Just think of a vacuum cleaner that pulls air at velocities over 300 M.P.H.—picks up water, oil, scrubbing solutions, metal chips or dirt in a single stroke—plus an adaptability to clean machinery and overhead fixtures as well as all type floors.

Protect your profits with America's most modern floor cleaning equipment—Write for Tornado Bulletin 607 today.

THE FAMOUS TORNADO-92

"4 Cleaning Tools in 1"

BREUER ELECTRIC MFG. CO.

5108 NORTH RAVENSWOOD AVENUE • CHICAGO 40, ILLINOIS

If you write maker identify as IEN - 13870

WOODWORKING . . Radial saw pivots beneath the work table center

Source: AMERICAN WOODWORKING MACHINERY CO. 98-102 Liberty St., Hackettstown, N. J.

Cuts at any angle

New design of the Uni-Point radial sawing machine is announced by the company, following purchase of sole manufacturing and sales rights from its original manufacturer. The machine is offered in a Model X36AF with a 5-hp. motor to take a 16-in. circular saw blade. Depth cutting capacity is 5 in. when the blade is set square. Cross cut capacity is to 25 inches. Ripping capacity is to 31 inches. A 7½-hp. motor can be supplied to specification if desired.

Feature of the construction is the roller bearing turntable that supports the radial arm. This table is located beneath the center of the rectangular work table to support the roller equipped ways in which the radial arm is mounted. The design permits retracting a saw blade behind the guide fence so the cross cut capacity remains at 25 in. for work ranging from 1 to 4 in. in thickness.

The table top is laminated tongue-and-groove maple measuring 2 in. in thickness. It is equipped with a 2 by 4-in. fence along the rear side. A safety guard can be provided to cover the saw blade while cutting proceeds. The steel base frame has been reinforced with diagonal bracing. A lever type locking device is assembled on the saw raising mechanism. Controls center at the front of the machine where they are safely away from the saw blade.

If you write maker identify as IEN - 13871

CRANE . . Motor driven jib unit mounts on truck or on wheeled base

Source: RUSHLIGHT'S INC. 2946 S. E. Powell, Portland 2, Oregon

Lifts ½ ton at 5 fpm.

Rating is ½ ton for this new crane. It has been designed to mount on a truck and to take its power from the truck battery. It also is available on a three-wheel structural base for portable operation in a plant. The 6-volt dc. motor is equipped with reversible control to drive a drum on which ¼-in. wire rope is wound. The rope is standard at 40 ft. in length.

The sheave bearings and the thrust bearing that takes the mast load are ball design. Control center at a push button connecting to the motor through an extension cord. The mast stands 59 in. above the bed plate which measures 10 by 14 in. and is ⅜ in. in thickness. The boom is 42 in. in length, can be extended to 60 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13872

Not investigate the use of aluminum or magnesium castings on *your* product?

Almost a half-century of experience producing quality Well-Cast light metal castings in sand, semi-permanent and permanent mold-Well-Made Wood and Metal Patterns.

THE WELLMAN BRONZE & ALUMINUM CO.

DEPT. 9, 12800 SHAKER BLVD., CLEVELAND 20, OHIO

If you write maker identify as IEN - 13873

KLIXON PROTECTORS

Keep Motors Running

IN "RECOLD" DEFROST COILS

"Recold" Water Defrost Coils, manufactured by Refrigeration Engineering Inc., Los Angeles, California, defrost in as little as five minutes with the use of ordinary tap water . . . with no product warm up. This means frozen foods are kept frozen and there is no spoilage.

To keep the fans operating dependably, Refrigeration Engineering Inc. uses motors with Klixon Protectors. The reason . . . they know the value of positive motor protection . . . know that Klixon Protectors always protect the motor from possible motor burnouts which might occur from overloads and overheating.

You, too, can have motor burnout protection by using motors that have Klixon protectors built in.

SPENCER THERMOSTAT
Division of Metals & Controls Corporation
312 FOREST ST., ATTLEBORO, MASS.

KLIXON

If you write maker identify as IEN - 13874

Collapsible pallet-box plus Gerrard Steel Strapping helps cut shipping costs!

Photo courtesy of International Harvester Company, Industrial Power Division

● The collapsible pallet-box shown here carries 3450 lbs. of front axles. Gerrard Round Steel Strapping reinforces all six sides of the container, keeping the box rigid and the contents safe until they reach their destination. When the box is unloaded and all straps removed, the box may be quickly collapsed and its members strapped together for return shipment. Costly shipping space is thereby conserved.

Call a Gerrard engineer for detailed information about how the Gerrard Method of Strapping can help you cut shipping costs, speed up production line tying, eliminate unnecessary containers or give stronger reinforcement to cartons, boxes, crates and pallets. Write for a free copy of the *Blue Book of Packaging.*

GERRARD STEEL STRAPPING DIVISION
UNITED STATES STEEL COMPANY
4701 S. Richmond St., Chicago 32, Ill.

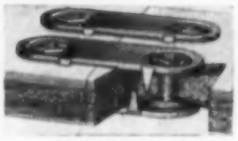
U·S·S GERRARD ROUND STEEL STRAPPING

UNITED STATES STEEL

If you write maker identify as IEN - 13875

FLEXCO® BELT FASTENERS and RIP PLATES

FOR HEAVY CONVEYOR AND ELEVATOR BELTS OF ANY WIDTH



Compression Grip distributes strain over whole plate area

★ FLEXCO Fasteners make tight butt joints of great strength and durability.
★ Trough naturally, operate smoothly through take-up pulleys.
★ Distribute pull or tension uniformly.
★ Made of Steel, Monel, Stainless, Everdur. Also Promal top plates.
★ FLEXCO Rip Plates are for bridging soft spots and FLEXCO Fasteners for patching or joining clean straight rips.

Order From Your Supply House. Ask for Bulletin F-100

FLEXIBLE STEEL LACING CO.
4610 Lexington Street, Chicago 44, Illinois

If you write maker identify as IEN - 13876

S.S.WHITE Elastoplastic PLUGS and CAPS

Slipped into or over the ends of plain tubing, these plugs and caps protect the ends and keep out dirt and moisture.

Made of flexible Vinylite plastic, they are resistant to most oils, offer high electrical insulation, and are easily applied and stay put. For details

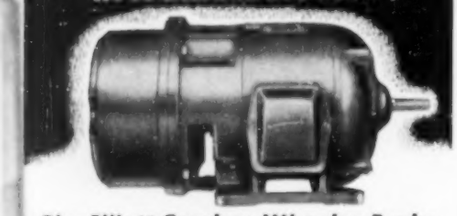
WRITE FOR BULLETIN P-5107

THE S.S.White PLASTICS DIVISION
DENTAL MFG. CO. Dept NP, 10 East 40th St. NEW YORK 16, N. Y.

WESTERN DISTRICT OFFICE: Times Building, Long Beach, California

If you write maker identify as IEN - 13877

EVERYTHING YOU WANT IN A BRAKE MOTOR!



The Elliott Crocker-Wheeler Brake is in a class by itself for *fast stopping action, long wear* and compactness. It can be mounted on double shaft extension NEMA standard D flange or C face motors without the need of mounting brackets or adaptors. With a dependable, smooth running Elliott C-W motor, it's a unit that will give you maximum service and top-notch performance.

SEND FOR THIS BULLETIN

It gives you all the details of construction, application and complete data up to sizes and motor frames. Ask for Brake Motor Bulletin SL-610-1 and address Elliott Co., Dept. N, Jeannette, Pa.

CW-34

ELLIOTT COMPANY — CROCKER-WHEELER DIVISION . . . AMPERE, N. J.
General Offices & Main Plant Jeannette, Pa.
Branch Offices and Representatives in Principal Cities
Elliott Approved Service Shops Cover the Country

If you write maker identify as IEN - 13878

BAKER 4-PURPOSE CARRIAGE
Makes a Fork Truck do more work

Hydraulically operated attachment for Baker Fork Trucks, providing:

1 STANDARD FORKS
2 CLAMP
3 FORK SPACER
4 SIDE SHIFTER

● With this special lift carriage assembly, in place of a regular fork lift carriage, any standard Baker 2000 to 4000-lb. Fork Truck becomes a multi-purpose handling machine. From one adjustment it functions as a *standard fork truck* for pallet and ordinary fork truck handling, as a *clamp truck* for handling drums, cartons, skid boxes, etc., and as a *fork-spacer*, permitting the handling of varying widths of pallets, skids or other loads. A simple change in the adjustment converts it into a *side-shifting fork truck* which speeds many carloading and storing operations by making it easier to line up loads in close quarters. Lateral movement of forks in each case is operator-controlled by a lever conveniently located on the dash. Action is hydraulic, with roller conveyor chain linkage.

For complete information ask for BULLETIN 1350-1

THE BAKER-RAULANG CO.
1226 WEST 80th STREET, CLEVELAND 2, OHIO

Baker INDUSTRIAL TRUCKS

If you write maker identify as IEN - 13879

PRINTING . . Photocopy equipment exposes, develops, dries and delivers

Source: GENERAL PHOTO PRODUCTS CO.
13-17 Summit Ave., Chatham, N. J.

11 by 17 inches

Single machine, combining the operations of exposing, developing and roll drying, has been added to the Exact Stat separate-exposing and developing equipment previously described IEN-11264-52. The new unit is known as the Exact-Photo-Copy. Prints, ready to use, can be produced from printed, drawn, written originals on opaque or translucent paper in about 30 seconds.

The original sheet and a sheet of light sensitized negative paper are inserted into the exposure slot in the housing. The two come out in about 8 sec. to be taken apart ready for the second operation. The negative is then faced to a coated but not light sensitive sheet of transfer paper and the two are inserted into the developing chamber. They come out of this chamber between drying rolls in about 10 seconds. The transfer sheet is peeled from the negative and is ready for use. The company supplies the machine, the two coated papers and the developing fluid.

If you write maker identify as IEN - 13880

EXTINGUISHING . . Foam compound for fires in alcohol and solvents

Source: PYRENE MFG. CO.
560 Belmont Ave., Newark 8, N. J.

Elastic foam blankets a fire

Resistance to breakdown by alcohol and other water soluble solvents characterizes the company's new foam compound. It is a general purpose material for fires in flammable liquids. It covers and extinguishes a fire, prevents reignition. It clings to hot vertical surfaces. Recommended concentration is six parts of the compound to 94 parts of water.

Identify as IEN - 13881

You can purchase an Acme Steel Company's wire stapling machine with a gasoline engine drive if you have need for the machine in locations where electricity is not available. You can mount it on a truck or pushcart and take it anywhere. Pull a rope and it starts. An idler control permits operation at speeds between 150 and 345 stitches per minute.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13882

HOW TO WELD CONTACTS

WELDPOWER*

Cuts Rejects
Increases Production
Eliminates Costly, Less Satisfactory Methods

However you now make them, look into the advantages of assembling contacts and relay tips with Raytheon stored energy WELDPOWER. Designed especially for welding light gauge ferrous or non-ferrous metals and dissimilar combinations, WELDPOWER provides the precision control essential for a strong, permanent bond. Because rejects go down as production goes up, WELDPOWER Units quickly pay for themselves in a better product at lower cost.

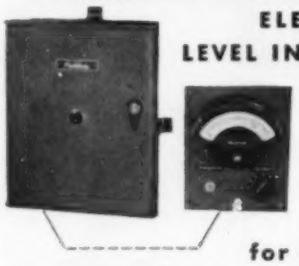
Investigate the many advantages of joining any small precision part with Raytheon Condenser WELDPOWER. Control units are available in 3 sizes with appropriate WELDPOWER Heads. Send sample parts or write for details. Address Dept 6270-IN-12.

*Reg. U. S. Pat. Off.

RAYTHEON
RAYTHEON MANUFACTURING COMPANY
Equipment Sales Division, Waltham 54, Mass.
DISTRICT OFFICES: Boston • New York • Cleveland • Chicago • New Orleans • Los Angeles (Wilmington) • San Francisco • Seattle
INTERNATIONAL DIVISION, 10 RECTOR STREET, NEW YORK CITY

If you write maker identify as IEN - 13883

NEW! FIELDEN TELSTOR ELECTRONIC LEVEL INDICATOR

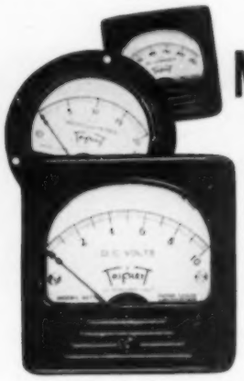


for accurate, continuous level measurement

Now, modern way to measure level of liquids, viscous fluids or granular solids in tanks or bins, without mechanical or pneumatic means. Actuated by change in capacitance between an insulated electrode and sides of the container. Degree of immersion of the electrode in stored material is indicated at remote or central station. Simple, accurate, low cost. For information, write Dept. XN-102.

fielden INSTRUMENT DIVISION
ROBERTSHAW-FULTON CONTROLS COMPANY
2920 North 4th Street • Philadelphia 33, Pennsylvania

If you write maker identify as IEN - 13884



MODERNIZE WITH TRIPLETT METERS

A SIZE, TYPE, AND STYLE FOR EVERY INSTALLATION

Your instrumentation is strictly modern in design and construction with Triplett Meters. You can have sizes 2" to 7" in a wide variety of case shapes and mounting arrangements, A.C., D.C., R.F., Rectifier or Dynamometer. Molded and metal cases, rear illumination, and other special features are available. For precision and economy virtually every meter part is made in Triplett plants under rigid humidity and dust control. Every meter represents the refinements gained in half a century of meter experience. Keep your panels up-to-the-minute with Triplett Meters—famous the world over for quality, accuracy, and dependability.

Triplett Electrical Instrument Co. Bluffton, Ohio, U.S.A.

FOR THE MAN WHO TAKES PRIDE IN HIS WORK
Triplett

If you write maker identify as IEN - 13885

VARIDRIVE

An all-in-one power drive, performing the work of a motor, speed changer, cone pulleys, rheostat or controller and gear box. Compact. Light weight. All the speeds you want, instantly, by turning a dial. Low-priced. Asbestos-protected windings. 4 to 10,000 rpm.

US MOTORS

Write for Bulletin 1601

U.S. ELECTRICAL MOTORS Inc.
Box 2058, Los Angeles 54, Cal. Milford, Conn.

If you write maker identify as IEN - 13886

FLEXIBLE SHAFT TOOLS

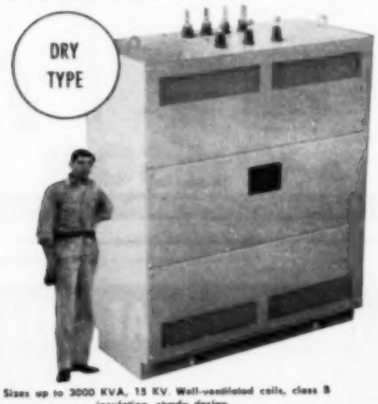
Whether you're finishing a casting, a weld, a fine die or stainless steel surface, you'll get the equipment that will do the job best from the best-known name in flexible shaft equipment—Haskins. Here is a company with a world of finishing experience to offer you—and a line of flexible shaft equipment in which long-life, multiple usefulness and economy have never been sacrificed to price.

R. G. HASKINS COMPANY 2647 W. Harrison St., Chicago, Ill.

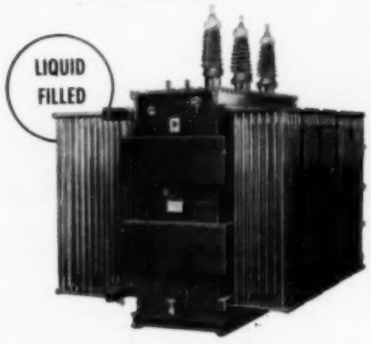
If you write maker identify as IEN - 13887

Uptegraff Power *Transformers*

Uptegraff offers a complete line of dry type and liquid filled power transformers, in sizes and ratings up to 10,000 KVA, 69 KV, for indoor or outdoor service.



Sizes up to 3000 KVA, 15 KV. Well-ventilated coils, class B insulation, sturdy design.



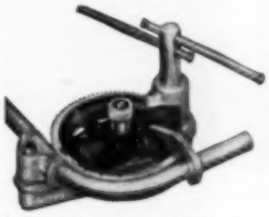
6000 KVA, 67 KV inert gas, oil seal, Uptegraff Power Transformer. Radiators well spaced for easy cleaning and maintenance.

R. E. UPTEGRAFF MANUFACTURING CO.
THOMAS STREET . . . SCOTTDALE, PENNSYLVANIA

If you write maker identify as IEN - 13889

BENDING . . Hand operated tool, seven sizes for ¼ to 1 in. tube

Source: **IMPERIAL BRASS MFG. CO.**
508 S. Racine Ave., Chicago 7, Ill.



About $12 to $26.50

The formed wheel that is employed for the bending action in this new gear-type tube bender carries gear teeth for a portion of its circumference to mesh with a hand rotated spindle secured to the tool base. Turning the spindle rotates the wheel so the tube grip will pull the tube around to make the bend in the desired amount.

Seven sizes are included in the line, each for a nominal tube size from ¼ to 1 inch. The smallest tube has a bending radius of 1¾ inches. The largest measures 4 inches. Tool weight is 3 to 14¼ pounds. Any type of tube can be handled.

If you write maker identify as IEN - 13890

LUBRICATING . . Wax base coolant minimizes heat in machining operations

Source: **S. C. JOHNSON & SON INC.**
1523-27 Howe St., Racine, Wis.

"No smoking" at the machines

New form of the company's Wax-Cut wax base cutting oil, previously described IEN-9461-52, provides a concentrated material that can be mixed in a proportion of 10 to 1 with any type oil for service as a coolant. Application can be made in automatic screw machines, gear hobbers and cutters, milling machines, grinding machines. The wax does not give off any odor. It will not turn rancid and assists in keeping temperature of the machining operation below the point at which tool or work burning can occur.

If you write maker identify as IEN - 13891

STATIC ELIMINATOR . . Polonium grids and brushes for sheet, strip, film

Source: **NUCLEAR PRODUCTS CO.**
10171-75 E. Rush St., Dept. 34, El Monte, Calif.

Sheet material passed between the two sets of brushes in this new assembly of the company's Staticmaster eliminator are brushed free from lint and dust and at the same time are subjected to harmless alpha rays from polonium grids above and below the work. These rays neutralize any static charge that may be on the surface. Two sizes will span sheet material measuring 3 and 6 in. in width.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13892

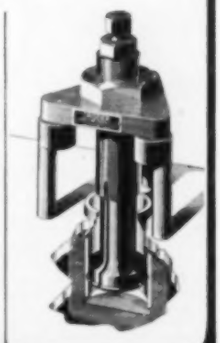
NEW EXTRACTOR

removes bushings from blind holes

. . . cuts time 75 per cent

The entirely new method of extracting bushings, bearings, sleeves, liners, etc. Eliminates necessity for machining, minimizes the hazard of injury to casings or excessive dismantling of equipment, handles holes from ½ to 2"—over 5 tons have been extracted with unit. Eliminates as much as 75 per cent of labor and time, slashes inventory.

For complete information write Department IEN-12.



CROZIER *Machine Tool Co.*
684 NO. PRAIRIE AVENUE, HAWTHORNE, CALIFORNIA

If you write maker identify as IEN - 13893

COMPLETE EASE OF OPERATION in a controller

Any control action easily reproduced.

The Bristol Series 500 Air-Operated Controller permits you to do it by *merely setting a dial!*

This saves hours of shutdown.

Easiest to service, too. Simple design, fewest parts, close-tolerance manufacturing—make the instrument interchangeable throughout. One simple adjustment puts it back in exact calibration after complete disassembly and reassembly.

Five types for controlling temperature, flow, pressure, liquid level, humidity, pH. Write for Bulletin 120. THE BRISTOL COMPANY, 107 Bristol Road, Waterbury 20, Conn.

BRISTOL

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

If you write maker identify as IEN - 13894

The American Brass Company, Waterbury, Conn., reports:

Plant layout speeded with Kodagraph Autopositive Paper

● The engineering and reproduction departments of The American Brass Company must keep pace with the constant plant-layout demands of ten manufacturing divisions. *And here's how Autopositive Paper saves time and dollars in this work.*

First, paper cutouts of machines and equipment are pasted in position on a whiteprint of the proposed layout. From this opaque pasteup, a positive reproduction on Autopositive Paper is made *directly*. There's no negative step, no darkroom handling with this revolutionary photographic intermediate material. Just expose in a standard whiteprint machine . . . processing in standard photographic solutions.

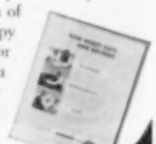
Then, the Autopositive intermediate—with dense photographic black lines on a durable, evenly translucent base—is used to produce the desired number of prints. These are sent to the branch involved to be studied and returned with comments.

This procedure may be repeated half a dozen times until complete agreement is reached on the final layout. And *every time* revolutionary Autopositive Paper saves time and dollars!

Kodagraph Autopositive Paper

"THE BIG NEW PLUS" in engineering drawing reproduction

Learn all the ways Kodagraph Autopositive Paper is simplifying routines in thousands of concerns. Write today for a free copy of "New Short Cuts and Savings" for interesting facts about companies you know . . . and a revolutionary new product *you should know.*



EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.

Kodak

If you write maker identify as IEN - 13896

Jenkins Fig. 106-A Series

● With only four bodies and a handful of interchangeable parts, you can assemble 18 different valves of the 106-A "family". Meeting 90% of all industrial piping needs, you can understand why the 106-A Series is so justly famous. The renewable disc, fitted in the slip-on stay-on disc holder, assures drop-tight closure and lasting economy under the toughest service conditions.

NEW 12 PAGE FOLDER NOW READY, describing the many easily-assembled combinations of the 106-A "family" of Renewable Composition Disc Bronze Valves and including a Disc Guide. Ask your Jenkins Distributor for it. Jenkins Bros., 80 White St., New York 13, N. Y.

LOOK FOR THIS DIAMOND MARK

JENKINS VALVES

TYPES, SIZES, PRESSURES, METALS FOR EVERY NEED

If you write maker identify as IEN - 13897

Thermo Electric Wires *for* Thermocouples Extensions

ACCURATE because the thermo elements for all wires are carefully matched for accurate calibration.

DURABLE because all insulating materials are carefully selected, applied and treated to give long service, even under abnormal conditions.

DEPENDABLE because the finished wires must meet ALL our high standards of accuracy and quality.

Thermo Electric Wires, for all standard thermocouple calibrations, are insulated with the latest types of plastics, asbestos and fiberglass. The fibrous insulations are compound saturated for added protection against moisture and abrasion. For severe abrasive conditions, a metallic wire or ribbon is braided directly over the outer insulation.

For detailed specifications—write for Wire Bulletin 30-Q

Thermo Electric Co., Inc.

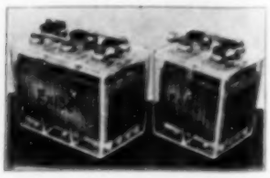
FAIR LAWN NEW JERSEY

If you write maker identify as IEN - 13898

If you write maker identify as IEN - 13899

BATTERY . . Two and three cells in transparent polystyrene cases

Source: ELECTRIC STORAGE BATTERY CO. P. O. Box 8109-A, Philadelphia 1, Pa.



Balls signal charge condition

Electrolyte level and the approximate state of charge can be noted at a glance through the transparent case of this new Type-PLX storage battery. It is designed for stationary application. A venting device of clear polystyrene is built into each cell to prevent excessive gas accumulation. The two-cell assembly has 50 amp. hr. capacity at the 8-hr. rate. The three-cell battery has 100 amp. hr. capacity at the same rate.

Markings on the transparent case indicate the recommended high and low electrolyte levels. A red, a white and a blue ball float in the electrolyte in a chamber built into each outer cell when the battery is fully charged. When it has been discharged 10 per cent the blue ball sinks. When it is 30 per cent discharged the white ball sinks and at 70 per cent the red one also goes down.

Applications include power supply for electric switch gear, communicating equipment, emergency lighting, railway signaling and alarm installations. Dimensions range from 4½ to 11⅝ in. in length. Width and height are standardized at 7⅝ and 10⅝ in. in four available sizes.

If you write maker identify as IEN - 13900

HEATING . . Induction equipment to anneal, harden, braze and solder

Source: LINDBERG ENGINEERING CO. 2456 W. Hubbard St., Chicago 12, Ill.

For production use

Rating is 50 kw. on 400,000 cycles and 100 per cent duty cycle for this new Model LI-50A-1 induction heating equipment. It has been designed for heating and fabricating operations and can be supplied for connection to a 220, 440 or 550-volt three-phase 60-cycle ac. power line. Electric circuit cooling is provided by a built-in closed water circuit that delivers temperature controlled water to the oscillator tube and tank coils. Water consumption is about 22½ gpm. with pressure at 20 to 80 pounds. The machine measures 96 by 68 by 80 inches. It weighs 5,400 pounds.

Identify as IEN - 13901

Now it is possible to dim fluorescent lamps smoothly and efficiently by just turning a knob. General Electric at Nela Park in Cleveland has worked out the solution to the problem. A control circuit maintains starting voltage so the lamps can be turned on instantly at any point in a dimming range. At the same time it changes the current to affect the light output when the control knob is turned.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13902

Now, with these amazing new organic bonding agents, you can join similar metals . . . or dissimilar metals . . . or metals to non-metals . . . quickly, easily—at extremely low heat or no heat at all!

What's more, simple contact-pressure is enough to form a permanent, porosity-free bond with tensile strength exceeding those of many solders! Now you can design and produce—AT LOW COST—such previously "impossible" combinations as:

- Titanium to Magnesium to Aluminum
- Metal to Glass to Ceramics
- Steel to Rubber to Brass
- Wood to Leather to Copper

—and scores more!

Tensile strengths exceeding 3000 psi. Low labor costs • Excellent capillary action • Free flowing • Low cost • Heat not essential • No annealing of base metal • Perfect heat control • No galvanic action • No porosity • Pressure not essential • Perfect insulation • No corrosion • No flux needed • Economical in mass production

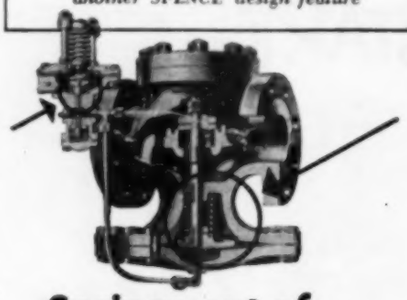
FREE ChemoTec Bonding Agents are available in liquid, paste, powder, or rod form to answer every production need. Send for FREE illustrated literature, technical data, etc., to see how these new developments can help solve YOUR joining headaches . . . today!

ChemoTec **Division** Dept. IEN-12

EUTECTIC WELDING ALLOYS CORP. 172nd St. & Northern Blvd. Flushing-New York, N. Y.

If you write maker identify as IEN - 13903

another SPENCE *design feature*



Springs out of path of steam

In the Spence Regulator, the springs are out of the path of the steam or other fluid flowing through the valve. They operate at low unit stress for exceptionally long life. Learn more about Spence design features that cut costs of pressure and temperature control. Send for Bulletin 500.

SE 110

SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

If you write maker identify as IEN - 13904

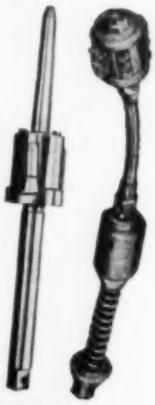
Wilsonize

- **to *beat* the clock on down-time**
- **to get *better* tube maintenance**

Choked or clogged tubes lower the efficiency of your tubular apparatus . . . result in costly down-time. But with Wilson Tube Cleaners on the job, even the toughest deposits are thoroughly removed from tubes of boilers, heat exchangers, stills, evaporators, etc. Tubes are left spic-and-span, ready for more service. And best of all, Wilson Tube Cleaners do their work in a hurry . . . help you beat the clock on down-time.

You get equally efficient service from Wilson Tube Expanders. They make rolling of new tubes . . . re-rolling of old tubes . . . quick and easy. These precision-manufactured tube expanders insure solid seating. They are available in all sizes, flaring and non-flaring types.

TWO BULLETINS—48-page Catalog describing complete Wilson Tube Cleaner line and up-to-the-minute Tube Expander Catalog—are available. A single request brings both.



THOMAS C. WILSON, INC.
21-11 44th AVENUE, LONG ISLAND CITY 1, N. Y.
CABLE "TUBECLEAN" NEW YORK

WILSON TW 787A

WILSON TUBE CLEANERS • WILSON TUBE EXPANDERS

If you write maker identify as IEN - 13905

FRAME—Crystal Clear VINYL frame permits wide-angle side vision. Velvet Soft—Fits contour of all faces snugly. Inside edge of frame rolled for more comfort and better fit. Generous grid vents for full ventilation.

LENS—Optilite Ⓑ Lens meets Federal Spec. for optical qualities and impact resistance—available in Crystal Clear or Green. Lens quickly and easily replaced—locks securely in frame. Extra large lens area—fits over most styles of personal glasses.

WRITE FOR LITERATURE AND PRICES

UNITED STATES SAFETY SERVICE CO.

If you write maker identify as IEN - 13906

PORTABLE HOIST

WEIGHS LESS THAN 10 POUNDS WITH A 1½ TON CAPACITY

SPECIFICATIONS

- LITTLE MULE is equipped with 16 feet of 7/32" preformed aircraft cable with a guaranteed single strength of 5,600 pounds. This permits a pull of 1,191 of 7 feet with double cable or 15 feet with single cable. No dangling chain. When cable is rolled on drum it is safely out of the way.
- Lever that controls raising and lowering mechanism is easy to reach, easy to operate. Can be shifted while wearing heavy gloves.
- LITTLE MULE is rated at 1½ tons but has an overload capacity of about 100%. The safety feature is in the 20" handle which is engineered to bend when the hoist is overloaded.
- There are no brakes to slip as the hoist has positive acting, double-interlocking pawls.
- All materials used in the construction of LITTLE MULE are corrosion proof or highly corrosion resistant.

LITTLE MULE
IT LIFTS . . . PULLS . . LOWERS

For complete information write . . . . .

LITTLE MULE CORP.
661 S.W. 2nd Ave. Ft. Lauderdale, Fla.

If you write maker identify as IEN - 13907

At Last!

For Conferences—
Sales Meetings—
Staff Meetings—
Lectures

A TABLET ARM CHAIR THAT *FOLDS!*

The Greatest Advance in the History of Folding Chairs

Undoubtedly, you've wished for a chair like this many times. Now it's here—perfected—ready to go to work for you. Here is permanent convenience and comfort adapted for emergency use—the greatest advance in the history of folding chairs.

The tablet arm is a built-in feature of the chair, not an attachment. It is strong, easy to operate, a marvel of engineering ingenuity (patent pending). For ordinary chair use when the arm is not needed, it folds down, out of the way, beside the chair, and flat *against* the chair for quick, safe stacking. The flat, folded depth of the chair is only 3 inches. The chair can be folded or unfolded in a matter of seconds. It is exceptionally easy to get into and out of this tablet arm chair.

Built throughout with all the famous Clarin insistence on utmost quality, the Clarin Tablet Arm Folding Chair will give years of faithful service. It is a supremely strong X-type chair, self-leveling, welded to insure exceptional strength and quietness. Its cushioned rubber feet, a Clarin exclusive, can't mar the finest floor. It comes with Clarin's famous reinforced seat of 5-ply plywood, or it can be had with fine quality leatherette on seat and back, or on seat alone. Available in wide range of frame and upholstery colors.

Clarin Mfg. Company, Dept. 30,
4640 W. Harrison St., Chicago 44, Ill.

Clarin *There is a Clarin Folding Chair for every purpose and need. Write today on your institution's letterhead for beautiful, new, FREE Catalog of the complete line.*

SINCE 1925 . . . THE ARISTOCRAT OF FOLDING CHAIRS

If you write maker identify as IEN - 13909

DRYING . . Infra-red heater with 12 lamp panel on portable stand

Source: MISKELLA INFRA-RED CO.
7307 Grand Ave., Cleveland 4, Ohio

About $95

Model C is a new assembly of 15 by 24-in. panel taking 12 sealed-reflector infra-red lamps and an adjustable structural support mounted on casters. The panel can be rotated through 360 deg. on a horizontal axis. The stand can be adjusted to position the lamp at any distance between 20 and 54 in. above the floor when the panel is horizontal and the lamps face downward.

Complete equipment includes the wired panel, a set of 125-watt lamps, a 6-ft. extension cord and plug and the structural panel and casters in knocked-down arrangement for assembly on the job. The lamps can be specified at either 125 or 250 watts.

If you write maker identify as IEN - 13910

FLOORS . . Patching material for holes in concrete and asphalt

Source: BITUCOTE PRODUCTS
1409-13 Central Industrial Drive, St. Louis 10, Mo.

Kit list about $8

Combination package has been assembled to include materials required to patch holes and breaks in concrete and asphalt floors. Included in the kit is a floor mastic, a setting powder, aggregate and an instruction sheet. A Type M for dry interior areas and a Type P for exterior and interior areas exposed to moisture are available to specification.

If you write maker identify as IEN - 13911

SHREDDING . . Rotary knife machine cuts scrap paper into long shreds

Source: INDUSTRIAL SHREDDER & CUTTER CO.
705 S. Ellsworth Ave., Salem, Ohio

Test it for 10 days

Silver Executive is a new machine in the company's line of paper shredding equipment. It has been designed particularly to cut up old office correspondence and confidential papers so they cannot be taken from a scrap pile and read. Six to 15 sheets of paper can be shredded into ¼-in. strips.

The machine measures 15½ by 15½ by 13 in. in closed position. It weighs 90 lb. and is driven by a ¼-hp. motor for operation on 110-volt ac. Throat width is 10 inches. The company recommends removal of paper clips prior to feeding the paper into the machine, but if they are fed in they will do no damage.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13912

Specify GM PRECISION-ENGINEERED

SERVO MOTORS

RELIABLE PERFORMANCE
RUGGED CONSTRUCTION

In the operation of—

- GUNFIRE CONTROLS
- ROCKET CONTROLS
- GUIDED MISSILES
- AIRCRAFT CONTROLS
- INDUSTRIAL CONTROLS

ACTUAL SIZE

G-M Servo Motors can be supplied to meet rigid military specifications with regard to humidity, temperature range, vibration and altitude. Available in 2, 4 or 8 pole construction and for frequencies from 60 to 400 cycles. . . Write today for complete information.

Another product of GM LABORATORIES • Inc.

4334 NORTH KNOX AVENUE, CHICAGO 41, ILLINOIS

If you write maker identify as IEN - 13913

TOUGH JOBS! THEY'RE A CINCH WITH THE CENTER-HOLE HYDRAULIC PULLER

17½, 30 and 50 TON SIZES

The OTC Power-Twin Hydraulic Puller is an ideal, economical tool, compact, powerful—handles 95% of the press work in the average shop. The Power-Twin may be detached from press—used as portable ram—speeds up pulling and installing jobs 75%, eliminates torque—remote control provides safety.

Famous OTC CENTER-HOLE Ram permits fast, easy adjustment to the work and interchange from push puller to sheave puller to bench press

A complete range and variety of Pullers, Adapters and Attachments are available to pull or install sleeves, bearings, races, gears, pinions, couplings, etc.

Amazingly efficient combination of Portable Pedestal Press and 17½ ton Power-Twin Hydraulic Puller. Every shop will find this unit a must . . . first few jobs pay for it in time, tools and money saved. Move it where you want it . . . it's portable.

See your OTC jobber or write us . . . today.

OWATONNA TOOL CO.
371 CEDAR ST. OWATONNA, MINN.

If you write maker identify as IEN - 13914

Materials gathered quickly and accurately from overhead bins

Easily emptied by tilting. Operator rides on car

BATCH SCALE CAR

Batch materials for clay, chemical, plastic, rubber and other products are gathered speedily in exact amounts with this motor-driven car. It travels on overhead rails enabling ingredients from various bins to be dumped directly in and weighed. It is emptied by tilting with a crank wheel.

GET THIS BOOK!
BOOKLET No. 2008 Packed with valuable data.

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4209 East 285th St., Wickliffe, Ohio

CLEVELAND TRAMRAIL

If you write maker identify as IEN - 13915

LIGHTWEIGHT?

Sure! Hackney Deep Drawn Shapes and Shells give your products greater strength while they eliminate excess weight. They've been successfully used to take the place of welded pipe, heavy forgings or castings. The smooth, rounded shapes of Hackney Seamless Deep Drawn Parts take your finishes well, too—improve product appearance. Can be made in sizes from one quart to 150 gallons—with inside diameters from about 3 inches to 32 inches. Let our 50 years of experience help you solve your design problems. Write today.

PRESSED STEEL TANK COMPANY
Manufacturer of Hackney Products

Hackney

1449 S. 66th St., Milwaukee 14
1322 Vanderbilt Concourse Bldg., New York 17
253 Hanna Bldg., Cleveland 15
636 W. Peachtree St., N. W., Room 135, Atlanta 3
208 S. LaSalle St., Room 766, Chicago 4
577 Roosevelt Bldg., Los Angeles 17

CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

If you write maker identify as IEN - 13916

GETS AROUND TO SPEED LIFTING

The ¼ ton 'Budgit' Aluminum Chain Block weighs only 29 lbs. Other sizes—½, 1, and 2 tons—are also light to carry, hang up and easy to use for spot-lifting anywhere.

The portable 'Budgit' Chain Block works fast. A chain pull of only 65 lbs. lifts 1 ton. Two sets of teeth in each gear carry the load—lifting is smooth. The large, powerful load brake adjusts itself. No ordinary hacksaw can cut the load chain. Every fastening is a strong spline.

Get years of safe service—invest in the economical 'Budgit' Chain Block. Send for Bulletin 198.

'Budgit' CHAIN BLOCKS

MANNING, MAXWELL & MOORE, INC.
Muskegon, Michigan

Builders of "Shaw-Box" Cranes, "Budgit" and "Load Lifter" Hoists and other lifting specialties. Makers of "Ashcroft" Gauges, "Hancock" Valves, "Consolidated" Safety and Relief Valves, "American" Industrial Instruments.

If you write maker identify as IEN - 13917

Cummins BALL•RITE 244

FAMOUS GEARED CHUCK

What BALL•RITE means to you: a combination of the finest "specs" in an electric tool, and includes—
1. Ball Bearings in the right places.
2. Always hardened gears.
3. Always double-coil motor (type always used in industrial drills).
4. Always dynamically balanced armature for smooth, flowing power. Turn it on—you can feel the difference!

RESULT: Best performance, longest life at lower cost to you.

ONLY $49.95

A $60 Drill in Everything But Price!

No drilling job is too tough for this heavy-duty "half-incher." Takes every load in stride—with its BALL•RITE construction that fights wear. Hardened gears give lasting, quiet operation. Dynamically balanced double-coil motor delivers big reserve of flowing power. Everything you'd expect in a $60 drill—full ½" capacity in metal, 1" in wood.

Compare the Cummins BALL•RITE 244 at your jobber or dealer now.

Buy right—Buy BALL•RITE

GET THE FACTS— Find out what BALL•RITE means to you. Send for Spec Sheet 1-122

Cummins
Cummins-Chicago Corp.
4740 N. Ravenswood, Chicago 40, Ill.
334 Lauder Ave., Toronto 10, Canada.

If you write maker identify as IEN - 13918

New Way to Cut Costs of Railway Car Handling!

SEND FOR THIS FREE BOOK

Get complete information on the Trackmobile—today's answer to low cost railway car handling. It operates on road and track—has a draw-bar pull equal to that of a 20-ton locomotive and is priced at a fraction of the cost of conventional-type plant locomotives. Speed hauling, save time, reduce costs now—write for Bulletin TM-101.

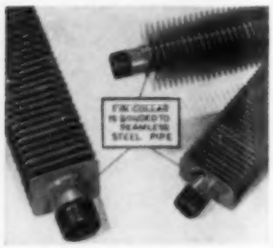
WHITING CORPORATION
15629 Lathrop Avenue • Harvey, Illinois

WHITING TRACKMOBILE

If you write maker identify as IEN - 13919

HEATING . . Finned steel pipe in 8, 10 and 12 ft. straight lengths

Source: LEE VINE FIN-TUBE RADIATOR CO.
14-18 Fair St., New Haven 11, Conn.



Mounts on wall brackets

Rectangular fins made of steel are flanged and the flanges are bonded to seamless steel pipe in this new space heating element. Three sizes in the line include 2-in. pipe with 4¼-in. square fins to provide 5¼ sq. ft. of equivalent direct radiation per lineal foot and two assemblies employing 1¼-in. pipe with fins measuring 3¼ by 3¼ in. or 2½ by 4 inches. In both these cases the rating is 4¼ sq. ft. of equivalent direct radiation per lineal foot.

Stock lengths are 8, 10 and 12 ft. including 2½-in. extensions on each end of the pipe. Other sizes are available in 6-in. increments from 2 to 12 feet. The pipe can be threaded or chamfered at both ends. Expanded metal grilles can be supplied in lengths from 2 to 8 ft. in 6-in. increments.

If you write maker identify as IEN - 13920

GAGE . . For tension to 1,000 grams in a standing or moving wire or cord

Source: SAXL INSTRUMENT CO.
20 Depot Road, Harvard, Mass.

Circular dial

Tension can be read in wire in a winding machine, as shown in the illustration, or in standing or moving cord, such as that employed in tire manufacture, with this new size in the company's tension meter, previously described IEN-1397-48. The new unit rates to 1,000 grams. It employs a wider trigger and larger pulleys than the original 50-gm. instrument. The pulleys are made of aluminum and operate on precision ball bearings.

Depressing the trigger rocks two of the three gaging rollers into line with the third centrally located one so the gage can be positioned over the wire in which tension is to be measured. Releasing the trigger frees the two rollers to return toward their original position under spring pressure. This moves the wire out of line to form a triangle, in depth depending on the tension. The gage reads grams of tension in the wire.

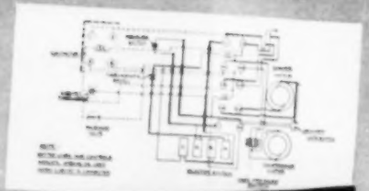
Identify as IEN - 13921

Transportation and handling of coal and iron from mine to blast furnace is the subject of a new 16-mm. sound color film that is available from Heyl and Patterson Inc. of Pittsburgh. The film runs for 28 minutes. It will be loaned to you on request at no charge other than postage.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13922

Forget Metal Shortages!



Give your SCHEMATIC DIAGRAMS the Advantages of PLASTICS

End the headaches of metal shortages for your schematic diagrams! Switch to plastics and you'll have perfect protection from soil and damage for your important instructions.

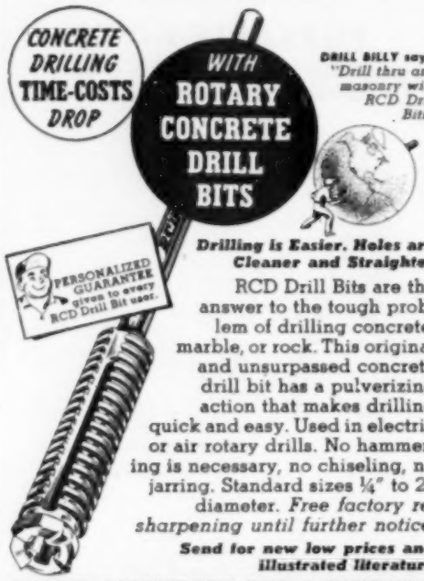
Sillcocks-Miller engineers are specialists in this precision work and can develop and produce diagrams made of plastics to your exact specifications. Write for details and quotations.

The SILLCOCKS-MILLER COMPANY
27 W. Parker Ave., Maplewood, N. J.

If you write maker identify as IEN - 13923

CONCRETE DRILLING TIME-COSTS DROP WITH ROTARY CONCRETE DRILL BITS

DRILL BILLY says: "Drill thru any masonry with RCD Drill Bits"



Drilling is Easier, Holes are Cleaner and Straighter

RCD Drill Bits are the answer to the tough problem of drilling concrete, marble, or rock. This original and unsurpassed concrete drill bit has a pulverizing action that makes drilling quick and easy. Used in electric or air rotary drills. No hammering is necessary, no chiseling, no jarring. Standard sizes ¼" to 2" diameter. *Free factory resharpening until further notice.*

Send for new low prices and illustrated literature

ROTARY CONCRETE DRILL COMPANY
640 S. Arroyo Parkway • Pasadena 1, California

If you write maker identify as IEN - 13924

Newark Wire Cloth COMPANY
342 VERONA AVENUE • NEWARK 4, N. J.

If you write maker identify as IEN - 13926

A-1035

EASTON

Furnace Cars

EASTON experience covers small and large capacity furnace cars for every requirement, including electric self-propelled cars for automatic continuous heat treating systems.

EASTON CAR & CONSTRUCTION CO.•EASTON, PA.

NEW YORK • PHILADELPHIA • PITTSBURGH

If you write maker identify as IEN - 13927

Moving or Storing is Rapid, Convenient and Inexpensive with

IRONBOUND SEMI-LIVE SKID PLATFORMS

Ruggedly built with capacities up to 2500 lbs. These units are quickly made mobile with the use of low cost lift jacks . . . One of the methods that Ironbound engineers use to increase production and conserve space at low cost.

SEMI-LIVE SKID WITH BOX TOP

. . . permanently attached or removable. Also available with many other superstructures to "Short-Haul" your products thru production or into storage. Useful in hundreds of spots in every plant.

THE IRONBOUND "SAFETY-SKID" WITH ROUND CORNERS

Ironbound construction assures long hard use with complete safety to product and operator. Still the time proven method for handling of materials efficiently and economically.

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

If you write maker identify as IEN - 13928

Twice as many

Photocopies Per Hour with Peerless Continuous Rotary Printers

Because of the new Peerless rotary exposure principle, your operator's productivity is more than doubled! Automatic controls eliminate fatigue. Little skill is required. No adjustments are needed. Uniform contact pressure assures prints of highest quality. Two models meet a wide range of requirements.

PEERLESS

Write today for free leaflet RP-1

PEERLESS PHOTO PRODUCTS, INC., SHOREHAM, L. I., N. Y.

Distributors in: Los Angeles, Chicago, Cleveland, Detroit, Pittsburgh, Buffalo, Tulsa, Dallas, Houston, Salt Lake City, Atlanta

If you write maker identify as IEN - 13929

MOTOR . . Single phase, 60 cycle, 110 volt unit rates 1/40 and 1/20 hp.

Source: MISSION ELECTRIC MFG. CO.
130-34 W. Colorado St., Pasadena 1, Calif.

Model K33N is a new design in the company's fractional horsepower line. It is available for operation at 3,400 rpm. in 1/40 hp. rating and at 3,200 rpm. rating 1/20 hp. It can be supplied with a base and rear shaft extension or in plain design without a base. Housing diameter is 3¾ in. and housing length is about 4 inches. Weight is a little under 6 pounds. You specify MIL-M-1940.

If you write maker identify as IEN - 13930

TESTING . . Prebuilt screen room for interference free electronic tests

Source: SHIELDING INC.
Norman St., Riverside Park, N. J.

Detail data in Bulletin 10

Wood frames, in various standard sizes, are employed to support 22-mesh drawn copper screen in this new screen room. It eliminates the interference problem in testing electronic equipment. The screen is silver plated at the seams. Panels are bolted together to secure clean metal-to-metal contact by the total of four layers of screen material. Construction keeps the floor of the room about 1 in. away from ground. Flat panels of ¾-in. plywood are placed inside the room on the floor to prevent damage to the screens. A room can be assembled in about 5 hr. or taken apart in the same time.

The door is provided with a double set of bronze fingers set at 90 deg. to each other to make metal to metal contact with the jamb. It is lined with a copper sheet. Hinges and door handle and a ⅛-in. brass strip are provided around the door periphery so it cannot sag. The door itself is a complete double shield cell. The door handles close the door tight in a wedge action applying pressure on bronze serrated fingers that are silver plated. Three room designs are double shield multiple-cell type, double shield isolated-cell type and single shield.

If you write maker identify as IEN - 13931

PRESS TOOLS . . Cutting block, rubber plastic, for clicking, dinking

Source: REMINGTON PRODUCTS CO.
1507-15 Copley Road, Akron 20, Ohio

Self-healing combination of rubber and plastic is employed in manufacture of this new 5-in. cutting block. It is known as the Super-Duty Rembloc and is a companion unit to the previously developed 1-in. Remboard. Five sizes are from 14 to 20 in. in width by 20 to 48 in. in length.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13932

PLS is a "Plastic Lead Seal" which prevents leakage under most severe conditions of pressure, temperature vibration, expansion and contraction. Also keeps underground connections leakproof for duration of installation. PLS lubricates threads. It never hardens. It prevents galling and seizure. Insoluble in all petroleum products, steam and water. Underwriters' Approved.

TRY A SAMPLE AT OUR EXPENSE!

JOHN CRANE

CRANE PACKING COMPANY
1115 CUYLER AVE • CHICAGO 13, ILLINOIS

If you write maker identify as IEN - 13933

ALLIS-CHALMERS PUMPS

NEW FILMS AVAILABLE!

Learn More About Theory . . . Application . . . Installation . . . and Maintenance of Centrifugal Pumps!

FREE! Three 12 to 20 minute sound-slide films are now available for showing to maintenance meetings, plant groups, and engineering societies. Information is practical and instructive. Films have been widely praised by educational and industrial groups since their release a few months ago. Easy-to-operate projector can be furnished. First film is "Theory of Centrifugal Pumps"; second, "Application Engineering"; third, "Installation and Maintenance." Call your nearby Allis-Chalmers distributor or district office now to arrange for showing, or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-2809

ALLIS-CHALMERS A-C

If you write maker identify as IEN - 13934

MAGNAFLUX

PIONEER IN NON-DESTRUCTIVE TESTING

Announces

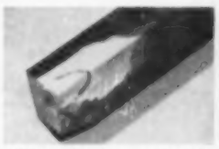
Spotcheck

a new, simple DYE PENETRANT INSPECTION

Use it to Locate and Mark Defects in Metals—Carbides—Plastics—Ceramics—Practically any Non-Porous Solid

Spotcheck is a new *lowest cost* inspection tool for use where remote location, small surface areas, limited volume or the cost of disassembling equipment make use of fixed inspection equipment impractical. The complete kit is as easy to carry as a dinner pail!

Spotcheck finds and indicates cracks, seams, porosity, laps, etc. Takes the guesswork out of countless sampling inspection jobs.—Helps prevent on-the-job failure of production machines. IT IS IDEAL FOR INSPECTION OF CARBIDE TOOLS AND OTHER TOOL CRIB USE!



How Spotcheck shows up non-visible crack in carbide tool.

Spotcheck crack indication revealed in inspection of local area of punch press frame.

COMPLETE KIT ONLY **$35.00** plus $1.00 shipping and handling

Eight assorted cans, accessories, instruction book, and carrying case, everything you need for Spotcheck inspection.

ORDER NOW

MAGNAFLUX CORPORATION
5914 Northwest Highway, Chicago 31, Ill.

Please send . . . . . Type SK-1 SPOTCHECK KITS at $35.00 each, plus $1.00 each, packing and shipping cost.

☐ CHECK ENCLOSED. Amount: $ . . . . . .

☐ Send on our P.O. Number . . . . . .

☐ Send only FREE illustrated bulletin, now.

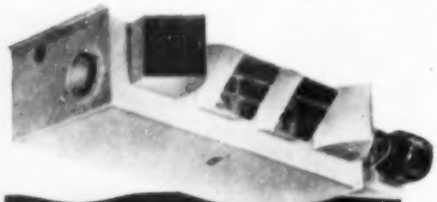
Name . . . . . Title . . . . . .

Company . . . . . .

Address . . . . . .

City . . . . . Zone . . . State . . . . . .

If you write make identify as IEN - 13936



Blow your space heating problems away

Dunham Blower Unit Heaters are designed to solve nearly every large area heating and ventilating problem.

Wide Choice of Types. Dunham Blower Heaters offer five different types of heater mountings—floor, wall, ceiling, inverted or platform. Each comes in a range of sizes and capacities. Each can handle steam or hot water. All can be equipped with, nozzles, dampers, filter sections and duct connections.

Easy Access to Parts. All working parts removable. For example, heating element and complete fan and shaft assembly can be withdrawn through either end of heater casing. *For full details* WRITE FOR BULLETIN 2501-11.

DUNHAM

C. A. DUNHAM CO.
400 West Madison Street
Chicago 6, Illinois

HEATING SYSTEMS AND EQUIPMENT

If you write make identify as IEN - 13937

how NORGREN lubricates air cylinder with less than 1 cfm air flow

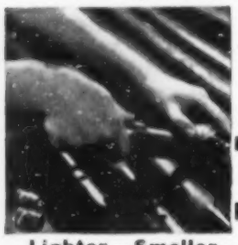
The Niles Tool Works of the Baldwin-Lima-Hamilton Corp., in cooperation with Norgren, developed this setup to build up a "negligible" flow of air to a flow rate adequate to give efficient lubrication of air cylinder.

WRITE, NOW, FOR DETAILS IN NORGREN BLUEPRINT NO. 117

Norgren®

C. A. NORGREN CO.
3432 So. Elati St., Englewood (suburb of Denver)
IN COLORFUL COLORADO

If you write make identify as IEN - 13938



Work EASIER—FASTER with Mall "Mighty Midget" PNEUMATIC DRILLS

Lighter—Smaller—More Powerful Than Any Similar Type Tools . . .

You can't beat the handling ease of a Mall "Midget" Pneumatic Drill . . . Weighs less than a pound in your hand — with lever or button throttle for added convenience. Attachments for wire brushing, grinding, rotary filing, sawing and sanding fit directly into chuck. Equipped with latest type "noise silencer" for quiet operation. Drills come with Kett 3-Jaw chuck spanner and open-end wrench, lubricant, and ¼" x 8' air hose. Send for Descriptive Bulletins.

40 Factory-Owned Warehouses, Coast to Coast, To Serve Our Customers And Thousands of Dealers.

Model PD-103L Pneumatic Drill — Weight 14 Oz.

Model PD-204L ¼" Pneumatic Drill — Weight 2 Lbs.

Mall MALL TOOL COMPANY
7383 S. Chicago Avenue • Chicago 19, Illinois

If you write make identify as IEN - 13939

CUTTING . . Pantograph machine travels acetylene torch to pattern

Source: HEATH ENGINEERING CO.
P. O. Box 69-A, Fort Collins, Colo.

Ask for Ultra-Graph Bulletin

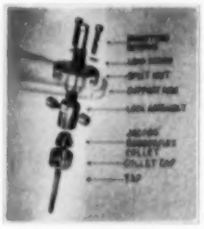
Ultra-Graph is the new trade name for recently improved design of the Contour Cutter, previously described IEN-5440-49. A motor with variable speed control rotates a magnetic tracer finger along the outline of a flat steel pattern, the movement carrying with it an acetylene torch supplied by the user. The torch is positioned in a holding bracket to duplicate the pattern in a work sheet. Work thickness depends upon the torch employed.

The machine is equipped with speed control suited for material from $\frac{1}{16}$ to 8 in. in thickness. Any shape can be cut including a 63-in. straight line, a 32-in. diameter in a complete circle, or 76-in. diameter in a semi-circle. The machine stands 62 in. in height. Its three supporting legs are 24 in. in length. The pantograph assembly measures 38 in. extended.

If you write make identify as IEN - 13940

THREADING . . Lead screw attachment applies with a reversing tapping head

Source: AUTOMATIC METHODS INC.
40-444 Walnut St., Room 145, Newark 1, N. J.



Eliminates feed drag

Auto-Tap is a new attachment for a standard 14 or 15-in. drilling machine to insert a lead screw between the tap chuck on a standard reversing tap driving head and the tap. The attachment is available in 10 pitches for 64 to 20 threads per inch. It can be specified for a desired pitch other than the stock sizes. It controls the tap feed so this part of a threading operation is independent of the operator.

Installation is by a bracket that is available to fit 14 and 15-in. drilling machines having 2¾-in. columns. This bracket takes interchangeable split nuts that engage mating lead screws each terminating in a Jacobs collet chuck. The upper end of the lead screw applies in the chuck on a reversing head mounted in the machine spindle.

Identify as IEN - 13941

It costs $75 per gallon. You paint it on as a protective film. Then you fuse it at 750 deg. F. Practically nothing will stick to the finished surface. Bread pans can be coated so they will require no greasing before they are filled with dough to go in the bake oven. Glue will not stick to surfaces that have been coated and fused. Powdered soap, rubber, candy, frozen foods slide off. It is known as Teflon finish. DuPont makes it.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write make identify as IEN - 13942

Protective Coatings for Metal

STOP Scaling and Corrosion

A CHEMICAL TREATMENT APPLIED LIKE PAINT

WHAT IT DOES — PROTECTS AGAINST . . .
- Corrosion and Scaling at high temperatures up to 1850° F.
- Acids
- Alkalies
- Oxidation

WHERE IT IS USED — Stacks • High Pressure Boilers • Exhausts • Breeches • Blowers • Stokers and Burners • Mufflers • Pickling and Plating Equipment • Vulcanizing Equipment

FOR FREE TEST SAMPLE — Write outlining your intended use, giving kind of metal, corrosive conditions and approximate minimum and maximum temperatures.

Markal COMPANY
3075 West Carroll Avenue • Chicago 12, Illinois

If you write make identify as IEN - 13943

The OFFICE VALET and Checker RACKS

Costumers, Wardrobe Racks, Locker Racks and Check Rooms.

An Answer to every Wraps Problem

Welded steel **Valet Racks** keep wraps dry, aired and "in press"...end unsanitary locker room conditions ...save floor space—fit in anywhere...standard in all strictly modern offices, factories, hotels, clubs, schools, churches, institutions or wherever there is a wraps problem.

Write for Catalog 5

VOGEL - PETERSON CO.
674 So. Michigan Ave., Chicago 5, Ill.

If you write make identify as IEN - 13944

NOW, SEE NEW WAYS CARBOLOY MAGNETS SAVE TIME, MONEY IN SHOPS

MAGNET USES

Hold steel plates to conveyors for painting.

Hold models in place on plant layouts.

Hold work for drill press or guiding operations.

Recover tools from dip and coolant tanks.

Shop owners everywhere are now using Carboloy Permanent Magnets to make 1001 money-saving devices around their plants.

As powerful holding, lifting and separating devices, the magnets are being applied to eliminate clamps, jigs, vises, fixtures and other assemblies; to speed setups, production; to retrieve tools from tanks; do any number of jobs better, cheaper, faster than devices formerly used.

POWERFUL

Small Carboloy Permanent Magnets can hold tremendous weights—furnish tremendous pull. Cost nothing to operate.

They provide a permanent source of magnetic energy, too! Give off uniform magnetic energy without wires or operating parts, remain virtually unaffected by heat, moisture or vibration.

You can get low-cost Carboloy Permanent Magnets *now* in many sizes and shapes. Put them to work for you *plant-wide*. Contact a Carboloy Field Engineer in your area, or write for services below.

Check these three new services!

1. **"Magnet Ideas for Industrial Plants"**—New, free kit contains specific data on how to apply permanent magnets to countless shop operations. New data sent free as issued.
2. **Shop Package "No. 1"**—Contains 48 Carboloy Permanent Magnets: 8 styles—3 pairs each. Magnetic pull up to 2 lbs. per magnet. Price, $10.00. Get yours now!
3. **Shop Package "No. 2"**—Contains 18 magnets: 4 styles—2 pairs each, and 1 style, 1 pair. Magnetic pull from 3 lbs. to 12 lbs. per magnet. Price $13.00. Order today!

"Carboloy" is the trademark for the products of Carboloy Department of General Electric Company

CARBOLOY PERMANENT MAGNETS
DEPARTMENT OF GENERAL ELECTRIC COMPANY
11199 E. 8 Mile St., Dept. D, Detroit 32, Mich.

Plants at Detroit, Michigan, Edmore, Michigan, and Schenectady, New York

If you write maker identify as **IEN - 13946**

ADD COMFORT . . . SPEED PRODUCTION

with Aerovent MAN COOLING **FANS**

Keep your employees cool for more efficient work. Aerovent "Macheta" air-foil fans are efficient and economical.

Certified Ratings PFMA

Model 24 Mancooler — 2, 4 or 6 blade Sizes 24" to 48"
Other Models: Direct Connected, Extended Shaft, Duct Type, Belt Driven, Pulley Drive. Sizes 12" to 144".

WRITE TODAY FOR ENGINEERING BULLETIN

AEROVENT FAN CO., Inc.
Ash & Brown Streets, Piqua, Ohio
Competent Sales Engineers in Principal Cities

If you write maker identify as **IEN - 13949**

HOIST . . Drum type electric to assembly in a crane carriage

Source: YALE & TOWNE MFG. CO.
11002 Roosevelt Blvd., Philadelphia 15, Pa.

A crane component

Rating is from 1 to 15 ton in this new design of the company's Cable King electric hoist. It has been developed for built-in application in the carriage of a double girder bridge crane for control in the crane cab or at a remote position. Controls can be supplied also to operate the carriage travel and the crane bridge travel, as well as the hoist.

Standard construction for the Cable King design is employed to include triple reduction spur gear drive, totally enclosed fan cooled motor for operation on ac. or dc., a steel frame and push-button operated heavy duty contactor. Also included are a Weston type friction brake in the gear train and a solenoid operated contracting drum type brake on the motor. Continuous duty operation is promoted by inclusion of a blower as an integral part of the motor brake drum.

Revolving fins produce air circulation and cooling action when a load is raised or lowered by maintaining a constant flow of air around the motor brake and the gear housing. The housing itself is equipped with heat radiating fins. Vents are provided at the bottom. The shafts ride on ball and roller bearings. The gears and load brake assembly are enclosed in an oil tight housing where they operate in the oil.

If you write maker identify as **IEN - 13952**

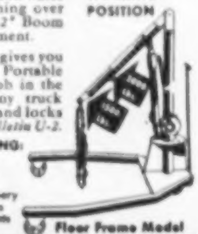
From shop hoist to truck hoist . . . in seconds!

NEW... BOOM EXTENSION ADDS 25% LOAD TRAVEL

UNIT "Utility" HOIST gives greater load travel plus three lifting points with capacities ranging from 1000 to 2000 lbs.

Hydraulically operated for shop, truck or machine, the Unit Hoist makes quick work of special handling operations. Setting pipe and water hydrants, working in manholes, reaching over obstructions are easy with the new 12" Boom Extension and optional Sheave Attachment.

REDUCE material handling time. Unit gives you perfect load control plus portability. Portable floor frame permits moving to any job in the shop. Hoist when transferred to any truck equipped with well swings 360° freely and locks in traveling position. *Write for Hoist Bulletin U-2.*



THE BEST WHEN HANDLING:
Drums, Motors, Boxes & Crates, Transmissions, Pipe, Tires, Farm Machinery, Fixtures, Hydrants

UNIT Manufacturers of hydraulic cylinders for original equipment

UNIT MANUFACTURING CO.
1229 HARMON PLACE • MINNEAPOLIS 3, MINN.

If you write maker identify as **IEN - 13947**

Solve that power problem fast* with a

FLUID MOTOR by GEROTOR

- Has low rotational inertia, permitting easy control of shaft speed and direction.
- Can be stalled under load for any period without damage.
- Operates safely in explosive and corrosive atmospheres.
- Can be installed in small, confined spaces.
- Embodies the exclusive Gerotor principle, for long life, less slippage, higher efficiency at lower operating cost.

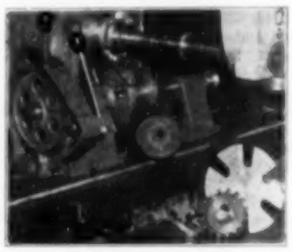
Six sizes, up to 8.7 h.p. Plain, base or flange mounting.

*prompt delivery now on GEROTOR hydraulic pumps & motors
Gerotor May Corporation • Box 86 • Baltimore 3, Maryland

If you write maker identify as **IEN - 13950**

INDEXING . . Base mounted spindle takes a pawl operated change gear

Source: A. C. WILLBRAND ENGINEERING CO.
629 Orwood Place, Syracuse 13, N. Y.



Head and one gear $190

The operator of this new index head moves one lever toward him to retract a locking rack from the change gear that mounts on the rear end of the index spindle. Then he moves a second lever to draw back a ratchet pawl. Finally he moves this second lever as far from him as an adjustable stop will permit and returns the rack lever to locked position. The spindle carries a No. 2 Morse taper. It can be fitted with a face plate or a collet chuck for work to 1 in. in diameter. Clearance is 4⅝ in. from table to spindle.

The head is designed to take Boston 16 pitch change gears. Any index combination can be set up that is divisible into the number of teeth in the gear being used at the time. The largest gear the head will take is 100 teeth. Accessory equipment includes a standard tailstock, face plate, collet assembly, three or four-jaw 6 or 8-in. chuck and an adjustable work stop.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 90

If you write maker identify as **IEN - 13953**

CASTELL PUSH BUTTON LOCKTITE

the perfectly balanced holder (black or colored)

An indispensable drawing tool for professional men everywhere — because LOCKTITE holds lead in bulldog grip, prevents it sliding back into holder. Reduces smearing and smudging, because your fingers never touch the graphite, except when refilling. Order from your Dealer today.

No. 9030 CASTELL Refill IMPORTED Master Degree Leads 7B to 9H

Reproduces more clean, sharp blue-prints than any other lead.

The same wonderful imported leads that you get in the CASTELL wood pencil. Usable in all standard holders. Also available in red, blue, green, yellow, carmine, orange, white and silver.

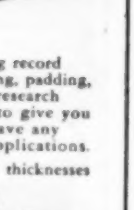
CASTELL the drawing pencil with the Master Degrees

A.W. FABER-CASTELL PENCIL COMPANY, INC. NEWARK, N. J.

If you write maker identify as **IEN - 13948**

OZITE all-hair felt has an outstanding record for solving problems of cushioning, padding, thermal and sound insulation. Our research and engineering staff are ready to give you competent assistance should you have any problems in these or similar applications.

OZITE felt in standard weights and thicknesses meets most production requirements. Special weights and thicknesses; as well as paper, cloth, or foil backings and stitched reinforcements may be had in production quantities.



Write today for OZITE bulletin No. 1500. If you desire samples for test, simply send a brief description of your application.

AMERICAN HAIR & FELT CO.
Dept. X212, Merchandise Mart Chicago 54, Illinois

If you write maker identify as **IEN - 13951**

AMERICAN ELECTRIC Model 275 MOTOR ALTERNATOR

1000 TO 1800 WATTS **400 CYCLE POWER SUPPLY** IN LESS THAN A 2 FOOT PACKAGE!

Small, light, compact, equally satisfactory on permanent or portable installations. Low speed—quiet operation. Meets power supply requirements for AN-E-19 equipment. Multiple units efficiently replace one single, large-capacity alternator . . . Save space, cost far less, protect against breakdowns!

NEW PRINCIPLE uses no moving coils, brushes, springs etc. . . . *It's as completely wear-free as its ball-bearings!* Capacities up to 1000 Watts single phase or up to 1800 Watts three phase. Single or 3 phase common-shaft motor drive. Larger capacities available. WRITE FOR DETAILS!

AMERICAN ELECTRIC MOTORS TRADE MARK

If you write maker identify as **IEN - 13954**

MIRACLE REINFORCEMENT BASE ADDS YEARS TO FLOOR LIFE!

Workmen installing Klemp Floorsteel Flexible Floor Armor for reinforcement of concrete surface.

- MINIMUM UPKEEP
- RUGGED
- SAFE

Floorsteel Rolls Out Like A Rug!

FLOORS STILL IN PERFECT CONDITION AFTER MORE THAN 25 YEARS! . . .

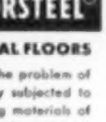
KLEMP HEXTEEL® or FLOORSTEEL®

REINFORCED (AND INSTALLED) INDUSTRIAL FLOORS

Klemp Hexteel or Floorsteel solve once and for all the problem of solidity, smoothness, and upkeep of any floor daily subjected to the hardest, most wearing assaults of trucks bearing materials of great weight. Fabricated of heavy-duty steel grid flooring material, they are scientifically designed to be filled with concrete or mastic on old or new floors (either wood or concrete). When filled, they make a solid one-piece, rigid, smooth, and seamless mat over the entire floor area, so that the tread of the wheel is always on steel.

IMPORTANT: Before installing—Insure longer floor life and maintenance savings by consulting Klemp engineers who will gladly help you (without obligation) to make a thorough study of your flooring problems.

Send for your free copy of the informative booklet: "Instructions for laying Klemp Hexteel and Floorsteel."



KLEMP We Tread the World with Safety

KLEMP METAL GRATING CORP.
Executive Offices: 1375 North Branch Street, Chicago 22, Illinois

If you write maker identify as IEN - 13955

Screens used in grain testing require an extreme accuracy of diameter for round holes and for dimensions of slotted perforations. Here H & K screens test only ".0005 variation in diameter of all the holes per screen. Such accuracy is a part of everyday H & K production.

H & K Screens may also be had to specifications as to kind and temper of metal—or in plastics, rubber, fabrikoids, etc.; practically any sheet, coil or plate material. Your inquiry, regardless of specifications, is invited for recommendation and prices.

Remember—H & K Grilles of Beauty for your ornamental applications

The Harrington & King Perforating Co.

5637 FILLMORE ST., CHICAGO 44, ILLINOIS
114 LIBERTY ST. NEW YORK 6, N. Y.

If you write maker identify as IEN - 13956

SWITCH NOW to Alnor

MOTOR-DRIVEN SWITCH

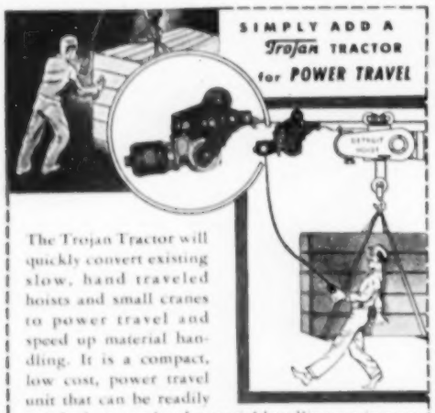
Wherever you now have a manually operated switch on your instrument board for closing a series of circuits one at a time, an Alnor Motor-Driven Switch provides a simple means of converting to automatic, continuous operation.

For example, if you have a pyrometer installation reading as many as 20 different temperature points, the Alnor Mote-Switch can be added to your present pyrometer to give continuous readings—on each station once every minute. Dial face can be easily read from 20 feet.

** Available in 6, 11, 12 and 20 circuit models. Write today for Bulletin 4703 that gives complete details. Illinois Testing Laboratories, Inc., Room 517, 420 N. LaSalle Street, Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 13957



The Trojan Tractor will quickly convert existing slow, hand traveled hoists and small cranes to power travel and speed up material handling. It is a compact, low cost, power travel unit that can be readily attached to overhead material handling equipment by means of a simple draw bar.

Send to this advertisement for more information and a copy of Trojan Tractor Bulletin 810; just fill in company name and address.

DETROIT HOIST & MACHINE CO.
8227 MORROW ST. • DETROIT 11, MICH.

Company _____

Address _____

NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Each includes identification, size of the material, information it contains so you can judge its value to you.

AIR CONDITIONING . . For overhead crane cabs is the subject of a technical article reprint which reviews the problems involved and their solution. Bulletin 1304, 16 pages. Dravo Corp., Liberty & Fifth, Pittsburgh 22, Pa. **IEN-01270**

BATTERIES . . For portable test instruments and electronic equipment, 1½ to 300 volts; individual specifications, summary sheet, interchangeability list. Form 888, 8 pages. Burgess Battery Co., 10 Burgess St., Freeport, Ill. **IEN-01271**

BEARINGS . . Solid roller bearings with split outer races, intended to mount direct on unmachined commercial shafting ⅜ to 2 inches. Catalog 522, 16 pages. Berliss Bearing Co., 12-16 Carmer Ave., Belleville 9, N. J. **IEN-01272**

BEARINGS . . Thrust bearings, ball and roller types; dimension tables for inch and metric standard units, illustrated special designs possible. Catalog 52, 12 pages. Morton Bearing Co., 202 Hill St., Ann Arbor, Mich. **IEN-01273**

BOILERS . . Package-type steam generators, 18 to 500 hp. and pressures from 15 to 200 lb.; dimensions on 14 models, firing rates, controls. Catalog 52, 4 pages. Cyclotherm Div., 161-5 E. First St., Dept. 29, Oswego, N. Y. **IEN-01274**

BUILDINGS . . Careystone corrugated roofing and siding of asbestos-cement; recommended installation methods and detail drawings. Engineering Manual 52, 82 pages. Philip Carey Mfg. Co., 51 Carey W., Cincinnati 15, Ohio **IEN-01275**

BRUSHES . . Metikor cylindrical machine brushes made of round tufts held in a strip that is wound on a metal core; types for tanners. Bulletin 20, 6 pages. M. W. Jenkins Sons Inc., 436-40 Pompton Ave., Cedar Grove, N. J. **IEN-01277**

CHEMICALS . . Sodium and potassium silicates, reviewed for uses from adhesives to welding rod coating, in some 40 types. Pocket booklet 17-LJ, 16 pages. Philadelphia Quartz Co., 1131 Public Ledger Bldg., Philadelphia 6, Pa. **IEN-01278**

CHEMICALS . . Coal-base products from creosote to xylene, also plasticizers, activated carbon, protective coatings, insecticides. "Chemicals", 12 pages. Pittsburgh Coke & Chemical Co., 1900 Grant Bldg., Pittsburgh 19, Pa. **IEN-01279**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descripsions . . Ratings . . See Page 50

If you write maker identify as IEN - 13958

FOTO-FLO* MODEL C PHOTO-COPYING MACHINE
New! Speedier! More Economical!

DAYLIGHT OPERATION NO DARKROOM REQUIRED

Makes up to 5 (18" x 24") Prints a Minute of anything written, printed, drawn or photographed

WRITE DEPT. 52-61 for information showing how FOTO-FLO can speed production and lower photo-copying costs.

*Reg. U. S. Pat. Off.

HALOID THE HALOID COMPANY ROCHESTER 3, NEW YORK Branch Offices in Principal Cities
Photocopy Papers • Photo copying Machines • Photographic Papers

If you write maker identify as IEN - 13959

PROBLEM: Dependable Circuitry

SOLUTION: Leach RELAYS

The efficient performance of *Leach Relays* is always at work delivering dependable, crisp, circuit control, infinite versatility and maximum potentials for use. Here at *Leach* you will find complete engineering, testing and production facilities to help you solve your relay problems.

FOR BETTER CONTROLS THROUGH BETTER RELAYS
—*Specify Leach*

LEACH RELAY CO.
5915 AVALON BOULEVARD, LOS ANGELES 3, CALIFORNIA
Representatives in Principal Cities of U. S. and Canada

If you write maker identify as IEN - 13960

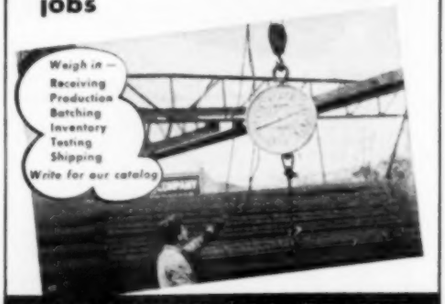
How much do you weigh?

Not you, but your products! Do you weigh in receiving, at production stages, etc. to protect your operation against overcharges, losses, miscalculations? HYDROSCALE, the hydraulic crane scale, makes it practical to check whenever and wherever you should, weighs on the spot, eliminates weighing stations and man power and equipment tie-ups.

36 MODELS, 500 to 200,000 LBS.

HYDROSCALE

reduces the effort and expense associated with routine weighing jobs



HYDROWAY SCALES, INC.
20632 W. 8 Mile Rd. • Detroit 19, Mich.

If you write maker identify as IEN - 13962

PRETTY SPRY FOR AN OLD GUY

20 years makes any electrical connector a venerable old-timer and the JOY plug pictured above has faithfully served its owner (name on request) since '31. *Your portable electric connectors will also last longer and require less maintenance attention if they're JOY built.*

TODAY'S DESIGNS

Thousands of styles and shapes ranging from "Cartridge-size" to mammoth round units for heavy industrial use have been developed. NO question about it, the JOY electrical connector line deserves your earnest consideration. Ask for your free copy of bulletin MC108, now.

JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING · PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LTD. · GALT, ONTARIO

If you write maker identify as IEN - 13963

BARNES

Exclusive GRADIENT HARDNESS GIVES YOU THE ROCKET

POWER and HAND BLADES
HIGH SPEED STEEL

FOR ALL-PURPOSE CUTTING

TOUGH! SAFE! FLEXIBLE!

W. O. BARNES CO., INC.
DETROIT 14, MICHIGAN

If you write maker identify as IEN - 13964

NOW! KEEP THOSE JOBS GOING, EVEN IN SUB-ZERO COLD!

COLD WEATHER FOOTWEAR EVERY ONE NEEDS DEVELOPED BY CONSULTANTS TO THE U. S. NAVY ON ARCTIC FOOTWEAR —

THERMOBOOT
TRADE MARK

- ABSOLUTE PROTECTION AGAINST FROST BITE
- COMPLETELY WATERPROOF
- WASHABLE — INSIDE AND OUT
- LIGHTWEIGHT, COMFORTABLE
- DURABLE HEELS, CLEATED SOLES
- HEAVY "KICKER" TOE
- U. S. GOV'T TESTED

Speed "outside" jobs by protecting personnel with the boot used by the Armed Forces in the Arctic and Korea. "Moisture barrier" utilizes wool and dead air space to insulate. Cleated sole for sure footing.

Three Models—All First Quality.
F-10 $14.95 PP.
10° Below to 60° Above Zero
SZ-40 $23.95 PP.
40° Below to 60° Above Zero
HL-5 $23.95 PP.
Low Temperature Waders

Available only through
TECHNO EFFICIENCY COUNCIL
9 HANSON PLACE
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NEW LITERATURE—Continued

CHUCKS . . "Roll-Lock" mandrels, arbors and chucks to hold work for turning, grinding, gaging, inspection; operation, stock sizes, specials. Bulletin 17-50, 52 pages. Scully-Jones & Co., 1936 S. Rockwell St., Chicago 8, Ill. **IEN-01280**

CLEANING . . How the company's Wheelabrator airless blast machine is used to clean castings in small foundries. Bulletin 874, 8 pages. American Wheelabrator & Equipment Corp., 1119 S. Byrkit St., Mishawaka, Ind. **IEN-01281**

COMPRESSORS . . Types YC and DYC, 75 to 350 hp.; sectional views show angle construction, feather valves, lubrication, intercooler. Bulletin 1-676-B1, 32 pages. Worthington Corp., 423 Worthington Ave., Harrison, N. J. **IEN-01282**

CONDUCTORS . . Specification and product data on electric power and control cables to assist in selection for uses from instrument boards to power stations. Catalog 24, 68 pages. Rome Cable Corp., 440 Ridge, Rome, N. Y. **IEN-01283**

CONDUCTORS . . Rigid and flexible waveguides for high-frequency equipment from 1.12 to 90 kmc.; standard units and AN numbers. "Microwave Components", 12 pages. Titeflex Inc., 593 Frelinghuysen Ave., Newark 5, N. J. **IEN-01284**

CONTROLS . . Detail drawings on standard flexible-shaft push-pull controls, heads, levers, knobs, quadrants and other fittings. Looseleaf catalog, 66 sheets. Shakespeare Products Co., 415-29 N. Pitcher St., Kalamazoo, Mich. **IEN-01285**

CONVEYING . . Woven-wire conveyor belts for operations from frying doughnuts to annealing glassware; illustrated types of weaves. Bulletin 107, 4 pages. Cambridge Wire Cloth Co., Vienna Road, Cambridge, Md. **IEN-01286**

CONVEYING . . Trough-type unit that oscillates at natural resonant frequency to convey by a series of gentle "throws and catches". "Compact Conveyor", 4 pages. Carrier Conveyor, 2142-44 Frankfort, Louisville 6, Ky. **IEN-01287**

CONVEYING . . Chip-Tote hinged steel-belt conveyor to remove chips, turnings from automatic machines and drop them in a container. Bulletin MF-640, 4 pages. May-Fran Engineering, 1634 Clarkstone, Cleveland 12, Ohio **IEN-01288**

CORROSION PROOFING . . Vapor-inhibitor prepared envelopes to keep steel and aluminum parts bright and shiny for years. "DryVapor Pack-Velopes", 4 pages. Berlin & Jones Co., 615 W. 26th St., New York 1, N. Y. **IEN-01290**

CORROSION PROOFING . . Mastic and other materials for exterior structures, also product finishes, silicone, neoprene, Teflon materials. Erkote Catalog 52, 24 pages. Earl Paint Corp., 238-42 Genesee St., Utica 2, N. Y. **IEN-01291**

CYLINDERS . . Hydraulic and pneumatic power cylinders, rotating and non-rotating designs, also operating valves, Air-Grip chucks. "Power Cylinders", 4 pages. Anker-Holth Div., 2739-43 Connors St., Port Huron, Mich. **IEN-01292**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

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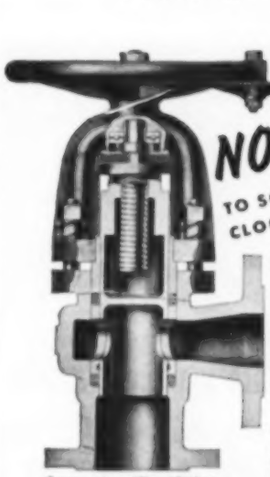

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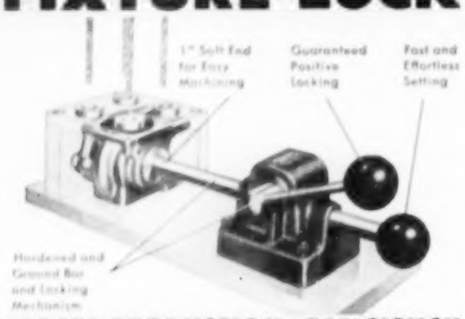

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NEW LITERATURE—*Continued*

CYLINDERS . . Double-acting pneumatic power cylinders in 11 bore sizes from 2 to 12 in. and six mounting types; capacity selection chart. Bulletin 731, 16 pages. Lindberg Engineering Co., 2456 W. Hubbard St., Chicago 12, Ill. **IEN-01293**

DRIVES . . Dihedral floating shaft couplings, 12 to 965 hp. at 100 rpm. in 11 sizes; drawings and dimensions misalignment capacity. Bulletin 53, 4 pages. Ajax Flexible Coupling Co., 1 English St., Westfield, N. Y. **IEN-01294**

DRIVES . . Worm-gear speed reducer applications are pictured for mixer, conveyor, punch press, fan drives in reprint bulletin. "Clevelands at Work", 8 pages. Cleveland Worm & Gear Co., 3258 E. 80th St., Cleveland 4, Ohio **IEN-01295**

DRIVES . . Basic principles of the eddy-current coupling, performance characteristics, design examples including brakes, dynamometers, clutches. Bulletin GBI, 16 pages. Dynamatic Corp., 3305-9 14th Ave., Kenosha, Wis. **IEN-01296**

DRIVES . . Cast-tooth sprocket wheels for conveyor chain; selection data on 207 sizes carried in stock for 78 chain sizes, materials. Book 2467, 8 pages. Link-Belt Co., 305-9 N. Michigan Ave., Chicago 1, Ill. **IEN-01297**

DUST COLLECTING . . Self-cleaning traveling-panel air filter assemblies; capacity table on 19 models, dimensions, performance data. Bulletin 201-D, 4 pages. Continental Air Filters, Box 1647-A, Louisville 1, Ky. **IEN-01298**

ELECTRONIC PRODUCTS . . Components including printed circuit elements, ceramic capacitors, switches, volume controls, insulators. Catalog 28, 36 pages. Centralab Div., Globe-Union, 902 E. Keefe Ave., Milwaukee 1, Wis. **IEN-01299**

ELECTRONIC PRODUCTS . . From vacuum tubes to TV components, also electronic hardware, tools, test instruments, communicating equipment. Catalog 53, 212 pages. Radio Shack Corp., 165-69 Washington, Boston 8, Mass. **IEN-01301**

ELECTRONIC PRODUCTS . . Including radar, resistance welding equipment, motor control, tubes, television, computers; data summaries. Bulletin ADM-1, 16 pages. Raytheon Mfg. Co., 138 River St., Waltham 54, Mass. **IEN-01302**

FABRICATING . . Structural support for instrument tubing made of expanded metal with fittings to accommodate direction or elevation. "Instrof" Bulletin 65-1, 4 pages. T. J. Cope Inc., 709-13 S. 50th St., Philadelphia 43, Pa. **IEN-01303**

FASTENINGS . . Welding nuts, clinch nuts, pipe plugs made by cold heading, also hexagon nuts in standard and jam designs. Catalog, "Industrial Fasteners", 16 pages. Decker Mfg. Co., 1936-40 Clark St., Albion, Mich. **IEN-01304**

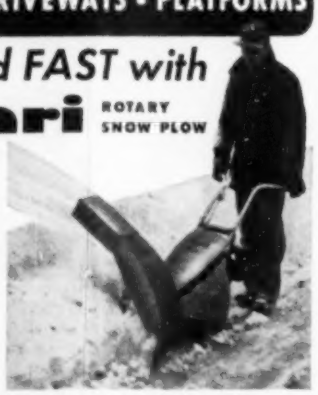
FASTENINGS . . Advantages are listed for Palnut single-thread hexagon-head locknuts over other locking methods, locking action is illustrated. Bulletin 577, 8 pages. Palnut Co., 59 Cordier St., Irvington 11, N. J. **IEN-01305**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

If you write maker identify as **IEN - 13972**

WALKS • DRIVEWAYS • PLATFORMS

Cleared FAST with the **jari** ROTARY SNOW PLOW



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Rotor's 15 New "Multi-power" Chippers are easier to handle . . . do jobs faster

The unique hollow piston and "doughnut" valve of the 15 new Rotor "Multi-power" Chipping Hammers provide the 1-2 punch to cut your chipping costs.

Lighter Weight. These new Rotor Chippers average 1½ to 2 lbs. lighter than other chippers making them easier to handle.

Shorter. Exclusive "doughnut" valve makes possible saving of 1" to 2" in length, making it easier to get into those tough, crowded corners.

Faster Cutting. You get more blows per minute . . . because of new exclusive design.

3 Models in 1. By a simple change of parts you can adapt each of the 5 basic models to serve as 3 hammers to match your job: (1) A "regular" model, (2) A "super-speed" model, (3) A "super-sock" model.

This is the biggest advancement in chipping hammers in the past 15 years! Find out all about it! Write for catalogue No. 37.

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AIR — THE ROTOR TOOL CO. — HIGH CYCLE
CLEVELAND, OHIO
UNBIASED ANALYSIS OF PORTABLE TOOL PROBLEMS

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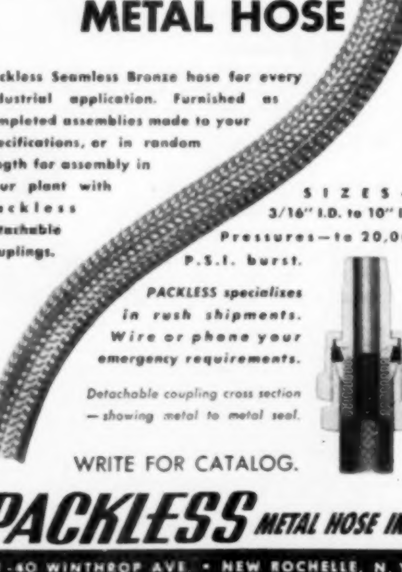
METAL HOSE



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SIZES — 3/16" I.D. to 10" I.D.
Pressures — to 20,000 P.S.I. burst.

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Source: MYSTIK ADHESIVE PRODUCTS
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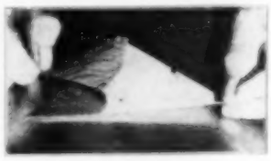

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Source: KOPPERS CO.
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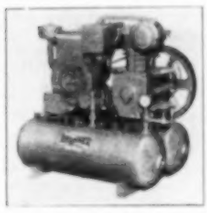
COMPRESSOR . . Engine driven, air cooled, for mobile appllication

Source: BRUNNER MFG. CO.
Broad & Utica Sts., Utica 1, N. Y.



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Concrete floor maintenance ceases to be a time killer and financial burden with the efficient, economical Multi-Clean Method. Multi-Clean Neo-Dry Concrete Sealer or Multi-Clean Concrete Preserver fortifies concrete against abrasion, oils, acids. Eliminates flaking and dusting. Conditions surface for heavy traffic by imparting a tough, sanitary finish . . . is an excellent base for Multi-Clean Anti-Slip Waterproof Wax.

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Multi-Clean All-Purpose Scrubber

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DENISON HydrOIL ics

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NEW LITERATURE — Continued

FASTENINGS . . Wood screws with slotted or Phillips head; list price tables in steel and brass, finishes, how to measure, size chart, packaging. Catalog, 12 pages. Southern Screw Co., 102 Rickert St., Statesville, N. C. **IEN-01306**

FILTERING . . Liquid filters for oil, water, chemicals, coolants; table of sizes, filter media and their relative efficiency, inquiry data form. Bulletin D-H, 12 pages. Dollinger Corp., 9-13 Centre Park, Rochester 3, N. Y. **IEN-01307**

FURNITURE . . Industrial stools and chairs with steel frames, wood or metal seats and backs, fixed and adjustable models, some in revolving design. Bulletin 200, 12 pages. Angle Steel Inc., 452 Thomas St., Plainwell, Mich. **IEN-01308**

FURNITURE . . Compact movable unit offices that combine desk, file, shelves and optional partitions, illustrated as to components and uses. "KordaRooms", 6 pages. Korda Industries, 29 W. 46th St., New York 36, N. Y. **IEN-01309**

FURNITURE . . Hallowell steel work benches, cabinet benches, bench legs and drawers, stools, desks, and tool stands, reviewed in condensed form. Bulletin 839-L, 4 pages. Standard Pressed Steel, Box 555, Jenkintown, Pa. **IEN-01310**

GAGES . . How to specify surface roughness in microinches rms., measure it with the Profilometer, establish specifications. Bulletin L-21, 4 pages. Micrometrical Mfg. Co., 343-37 S. Main St., Ann Arbor, Mich. **IEN-01311**

GAGES . . Thickness gage for strip or sheet, moving or stationary, metallic or non-metallic, hot or cold, based on X-ray tube and pickup. Bulletin, "Measuray 50", 16 pages. Sheffield Corp., 719-23 Springfield, Dayton 1, Ohio **IEN-01312**

GENERATORS . . For oxygen and nitrogen from the air, using a liquefying and distillation method, in standard models to 500 tons oxygen per day. Catalog 52, 12 pages. Air Products Inc., P. O. Box 538-A, Allentown, Pa. **IEN-01313**

HEATING . . Glass-working gas torches, gas-air mixers, pressure regulators, gas burners, tubing, accessory equipment, vacuum pumps. Bulletin 12-K, 6 pages. Research Vacuum Supply Co., 3436 W. Montrose Ave., Chicago 18, Ill. **IEN-01315**

HOSE FITTINGS . . Clamps in steel, malleable-iron and high-pressure designs; size tables, application suggestions for hose to 17¼ in. o.d. Bulletin 125, 4 pages. Hose Accessories Co., 2700 N. 17th St., Philadelphia 32, Pa. **IEN-01316**

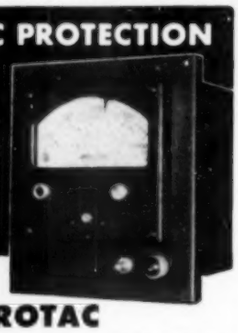
LAPPING . . Color coded recommendation chart on 16 grades of diamond compound for roughing and finishing, with micron sizes, list prices. "Mirra-Lap", 4 pages. J. K. Smit & Sons Inc., 10 Murray St., Murray Hill, N. J. **IEN-01317**

LATHES . . Bench, floor, turret and other types, also attachments, chucks, tools, accessories, shaping machines, drill presses, motors. Catalog 5205, 92 pages. South Bend Lathe Works, 391 E. Madison St., South Bend 22, Ind. **IEN-01318**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13989

AUTOMATIC PROTECTION OR CONTROL for your heating process



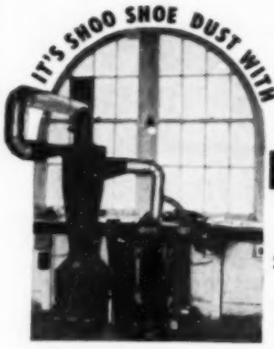
. . . WITH
ALNOR PYROTAC

Here's a simple, low-cost way to obtain AUTOMATIC PROTECTION against damage due to excessive temperatures . . . safeguard your investment in heating equipment and materials in process. This precision-built instrument constantly indicates temperature of the heated equipment and sounds an alarm and/or shuts down the heated circuit at a safe, pre-set temperature. It may also be used as a CONTROLLER on a process requiring shutdown upon reaching a final process temperature—such as ceramic kilns, molds, etc. Automatic thermocouple break protection assures safety if couple or extension wires should break.

Ask your Alnor representative for details on this sturdy, precise instrument. You'll find the price of less than a hundred dollars unusual for an instrument of this type. Write for bulletin that contains complete description and wiring diagrams of actual applications. Illinois Testing Laboratories, Inc., Room 517, 420 N. LaSalle Street, Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 13990



THIS TORIT DUST SEPARATOR

Here is an installation involving a heavy volume of dust and lint, some of it of a particularly adhesive character. It was solved to the complete satisfaction of the user and the Wisconsin Industrial Commission, with the Torit 19-FM Dust Separator illustrated.

Torit dust collecting equipment connected to individual or small groups of machines possesses many advantages. There is little or no idle running time. No maze of piping obscures lighting arrangements, and pipe line friction is practically eliminated. Neither is there any interference with production set ups.

Whether your dust problems are large or small it will pay you to take those problems to:

TORIT DOOR FASTENER
The sturdy and efficient door fastener used on Torit cabinets is available for use on your own products. Strike plate either flat or angular. Write for quantity prices.

TORIT MANUFACTURING CO.
286 WALNUT ST. ST. PAUL 2, MINN.
P. S. Also ask for the New Torit Catalog.

If you write maker identify as IEN - 13991

Most For Your Money

THE GREAT NEW "500" RIDGID

PIPE & BOLT THREADING MACHINE

Full of typical RIDGID improvements

- Range ¼" to 2" pipe; ¼" to 2" bolts.
- Cutting, threading and reaming tools operate independently and right up to chuck, swing up out of way when not in use.
- New RIDGID quick-opening quadritype, dualtype and monotype die heads save time and work.
- Concealed oil system, reversible pump, no priming.
- More than 20 other efficiency improvements—see this remarkable new RIDGID "500" at your Supply House!

THE RIDGE TOOL CO. • ELYRIA, OHIO

RIDGID Work-Saver Pipe Tools

If you write maker identify as IEN - 13993

NEW INDUSTRIAL HUMIDIFIER

BAHNSON TYPE E Self-Contained Unit Humidifier

Requires only water supply and electrical connection

NOTE THESE FEATURES!

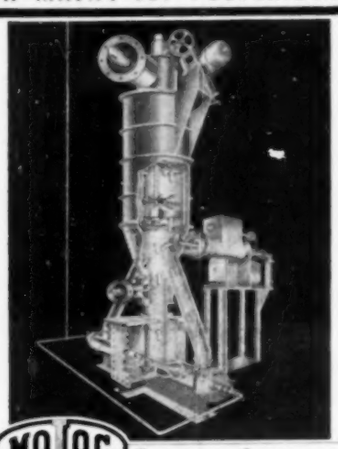
- HIGH CAPACITY—Evaporates 3 gallons per hour with ¼ HP motor.
- AUTOMATICALLY CONTROLLED at any desired relative humidity.
- SIMPLE TO INSTALL—Just uncrate and suspend from ceiling.
- ELECTRIC MOTORS for all common current characteristics.
- WATER SUPPLY connection for ¼" tube or ⅛" pipe provided.
- NEEDS NO pump, duct, compressed air, steam, drain or floor space.
- EFFICIENT centrifugal atomization of ordinary city water.
- TWO MODELS. ¼ HP for high capacity, ⅛ HP for small rooms.

FOR COMPLETE HUMIDIFICATION SYSTEMS, FOR BOOSTING, FOR SPOT HUMIDIFICATION, FOR LABORATORIES

FOR TRULY DEPENDABLE LOW-COST HUMIDIFICATION Bahnson Company ENGINEERS AND MANUFACTURERS WINSTON-SALEM, N. C.

If you write maker identify as IEN - 13994

WRITE FOR THE NEW TECHNICAL BULLETIN ON MAJAC JET PULVERIZERS



MAJAC Engineering Company
189 FREEPORT ROAD
BLAWNOX (PITTSBURGH DISTRICT) PENNA.

If you write maker identify as IEN - 13995

MET-L-WOOD METAL BONDED TO PLYWOOD

Has Hundreds of Structural Uses in Modern Plants

To Name a Few:

- Walls and Partitions
- Doors
- Counters and Shelves
- Traffic Panels
- Truck Bodies (Patented "Ribless" Construction)
- Truck Body Panels
- X-Ray Rooms
- Moisture-Vapor-Proof Rooms and Containers
- Decorative Finishes

Met-L-Wood is metal bonded to plywood—permanently. Many metals, woods, thicknesses, shapes, finishes are available to meet YOUR requirements.

Met-L-Wood stock panels and prefabricated units are a challenge to modern industrial engineers and designers because of their multiple possibilities in economical, structurally-sound designs in hundreds of varied uses. Best start toward thinking in terms of Met-L-Wood design opportunities is to send for the Bulletin described below. Met-L-Wood Engineering Service is available without obligation on specific problems.

SEND FOR THIS BULLETIN ON MET-L-WOOD USES AND ADVANTAGES

Quick facts, with illustrations and diagrams on Met-L-Wood applications, types, possibilities. Sent without obligation on request.

MET-L-WOOD CORPORATION
6735 West 65th Street • Chicago 38, Illinois
"Met-L-Wood... opening new horizons to structural designers"

If you write maker identify as IEN - 13996

SEALING . . Spiral Teflon packing to back up O-rings or replace them

Source: W. S. SHAMBAN & CO.
5745-49 Marilyn Ave., Dept. D, Culver City, Calif.

Permanently protects the O-ring

Inside diameter ranges from 0.125 to 15.500 in. in this new line of Teflon spiral back-up rings, previously described IEN 9533-52. The new unit is designed to replace leather as a back-up ring for the O-rings. It also applies in place of the O-ring in one continuous spiral of several layers. The material is chemically inert. It will not shrink, swell, harden or soften. It remains serviceable in a temperature range between minus 110 and plus 500 deg. F.

If you write maker identify as IEN - 13997

PLASTICS . . Rulon and Teflon molded in specified shapes and sizes

Source: DIXON LUBRICATING SADDLE CO.
10 High St., Bristol, R. I.

Molded parts to order

The company announces availability of its plastic material, Rulon, and the DuPont material, Teflon, in specified parts for given purposes. Rulon is suited particularly for bearings in which no lubrication can be applied. It will withstand temperatures to 400 deg. F. It is chemically inert, has excellent electrical properties and is inherently slippery through its whole structure. It is supplied as a half-sleeve bearing to operate with a cast iron or hardened steel shaft in a range between 100 and 200 rpm. with load to 175 lb. per square inch.

If you write maker identify as IEN - 13998

HEATING . . Electric element to shrink fit large clamping studs

Source: EDWIN L. WIEGAND CO.
7505 Thomas Blvd., Pittsburgh 8, Pa.

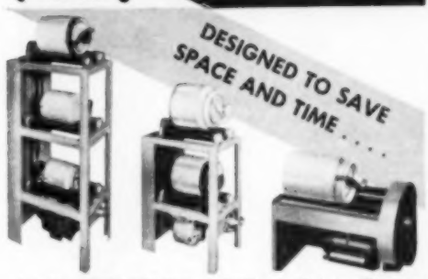
Assists in machine assembly

Stud Heater is a new alloy sheathed electric tubular element in the company's Chromalox line. It is equipped with a handle grip and connections at the rear end. It is designed to insert in a hole drilled along the axis of a large stud so the stud can be heated and its nut drawn down hot to make a shrink fit. Standard element lengths range from 10 to 70 inches. Rating is 2 to 12 kw. Outside diameter is ½ to 1 inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 13999

New! JAR MILLS



DESIGNED TO SAVE SPACE AND TIME . . . .

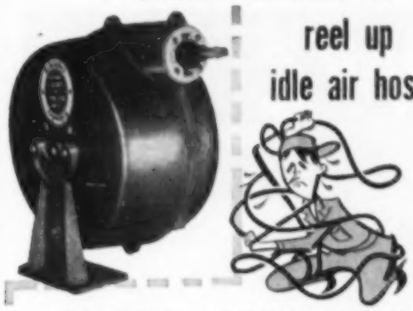
Here's a "unitized" line of "roller-type" jar mills especially designed for the busy, crowded laboratory. They are tiered to occupy a minimum of space. They feature a patented roller design that keeps jars centered — permits faster operation. The operator simply sets the jar on the rollers and starts the mill.

These mills are sturdily built with welded steel frames, heavy-duty oilite bearings, extra powerful drives. They are available in sizes to handle 1 to 12 jars of 1 pint to 3 gallon capacity. Laterally adjustable rollers permit rolling any round container from 2½"-13" dia. Variable speed drive optional on larger models.

Write for details, today!

U. S. STONEWARE CO.
PROCESS EQUIPMENT DIVISION, AKRON 9, OHIO

If you write maker identify as IEN - 14000



reel up idle air hose

Don't clutter up your shop with loose coils of air hose. See how **Schrader's "Tuck-Away" Hose Reels** will add new safety to your use of air—how they'll keep air lines out of harm's way . . . eliminate a traffic hazard in your shop.

Compact, easy to install, Schrader Hose Reels deliver just the wanted length of hose, rewind it quickly with a slight tug.

Write for details on the Schrader "Tuck-Away" Hose Reel and other Schrader air accessories that will help you get the most out of your air line equipment. Write Schrader today.

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
459 Vanderbilt Ave., Dept. D-48, Brooklyn 38, N. Y.

If you write maker identify as IEN - 14001

ONE . . Good Way TO SAVE PRODUCTION TIME

KESTER SOLDERFORMS

For Soldering with flame, carbon-resistance, even, induction and conventional iron

DIMENSIONAL STABILITY Every single Kester Solderform is made exactly to specification. What's more . . . they are delivered that way to you, in perfect condition, because of Kester's scientific packaging.

Write for sample assortment or test samples for your specific job.

KESTER SOLDER COMPANY
4211 Wrightwood Ave., Chicago 39
Newark 5, New Jersey • Brantford, Canada

KESTER SOLDER

If you write maker identify as IEN - 14002

Aeroquip

FLEXIBLE HOSE LINES CUT COSTS

The "Aeroquip Idea" saves time, saves money, reduces inventory. To make your own Hose Lines, simply cut bulk hose to the required length and attach an Aeroquip reusable fitting.

AEROQUIP CORPORATION
JACKSON, MICHIGAN
Eight strategically located sales offices and warehouses plus a nationwide dealer distributor organization make Aeroquip Products quickly available everywhere
AEROQUIP PRODUCTS ARE FULLY PROTECTED BY PATENTS IN U.S.A. AND ABROAD

If you write maker identify as IEN - 14003

New Flexible Sealing T-J AIR CYLINDER

Designed with revolutionary application of Super-Cushion

It's *sealed with pressure*—insures positive cushion action combined with automatic valving action for fast return stroke . . . eliminates binding and sticking . . . operates with *low friction, minimum wear,* and *added power* due to higher efficiency. Many more plus features! Wide range of styles and capacities. Write for bulletin 252. The Tomkins-Johnson Co., Jackson, Mich.

35 YEARS' EXPERIENCE

TOMKINS-JOHNSON

If you write maker identify as IEN - 14004

PREFERRED Spray Gun

Binks Model 18

Every year, more finishers choose Binks Model 18 over other guns—and for very good reasons.

Model 18 uses air more efficiently . . . provides finer atomization of paint . . . and, most important of all, assures finer finishes because it is the best gun we've made in our entire 50 years of supplying leading manufacturers with spray painting equipment.

Send for Catalog-Data Book No. 955

for information on the Model 18 and other spray guns in Binks complete line. Write: Binks Manufacturing Company 3120-34 West Carroll Ave., Chicago 12, Illinois

Binks EVERYTHING FOR SPRAY PAINTING

If you write maker identify as IEN - 14005

Stop wasting money!

Protect your investment in coated abrasives

A new booklet from Armour's Coated Abrasives Division tells you how to stop losses—in time and money—from improperly stored coated abrasives. Clogging, filling, cracking, loss of grains—these are some of the things proper storage can prevent. Send for free copy of "How to Store Coated Abrasives."

mail this coupon today

Please send booklet "How to Store Coated Abrasives."

Name

Company

Address

City Zone State

ARMOUR Coated Abrasives

Armour and Company • North Benton Road • Alliance, Ohio

NEW LITERATURE—Continued

LIGHTING . . Ceiling construction that combines light fixtures, acoustical correction and provision for fresh air supply. "Acusti-Luminus", 8 pages. Luminous Ceilings Inc., 2502 W. North Ave., Chicago 47, Ill. **IEN-01319**

LUBRICATING . . Oiler fittings in straight and angle designs, also slit-sealing ball-shape rubber caps; picture index, specifications. Oiler Catalog, 24 pages. Eynon-Dakin Co., 6602 Freeland Ave., Detroit 27, Mich. **IEN-01320**

LUBRICATING . . Force-feed lubricators to use on machinery, 2 to 32 pint capacity, 1 to 24 feeds per unit; how they work and list prices. Catalog L-52, 16 pages. Hills-McCanna Co., 2347 W. Nelson St., Chicago 18, Ill. **IEN-01321**

LUBRICATING . . Centralized lubricating equipment for machine use to dispense oil or grease to the bearings; manifold and reversible. Bulletin 529, 4 pages. Trabon Engineering Corp., 1812-16 E. 40th St., Cleveland 3, Ohio **IEN-01322**

MAGNIFYING . . Optical instruments for quality control in industrial production including contour projectors, toolmaker's and other microscopes. Catalog D-22, 8 pages. Bausch & Lomb, 626 St. Paul St., Rochester 2, N. Y. **IEN-01323**

METALS . . Perforated in round, slotted, triangle, square, angle and ornamental patterns; actual-size pictures and uses. "Perforated Materials", 8 pages. Erdle Perforating Co., 175-79 York St., Rochester 11, N. Y. **IEN-01325**

METALS . . Perforated-sheet fabricated parts such as strainers, screens, filters, also wire-cloth parts; examples of both. "Fabricated Products", 8 pages. Pittsfield Products Inc., 2273-77 Platt Rd., Ann Arbor, Mich. **IEN-01326**

METALS . . Pictures show strength, mar and smudge-resistance, other applications of Rigid-Tex textured metal sheet and typical patterns. Folder DR-952, 6 pages. Rigidized Metals Corp., 664-P Ohio St., Buffalo 3, N. Y. **IEN-01327**

METERS . . Integrating flow meters for steam, air, oil, water, gas to assist in allocating cost to plant departments; available types. Catalog 2300, 28 pages. Brown Instruments Div., 4456 Wayne Ave., Philadelphia 44, Pa. **IEN-01328**

METERS . . Pneumatic-electric flow meter for fluctuating flows, dirty gases, dangerous fluids, vaporous liquids; operating schematic. Bulletin 704, 4 pages. Republic Flow Meters Co., 2244 Diversey Parkway, Chicago 47, Ill. **IEN-01329**

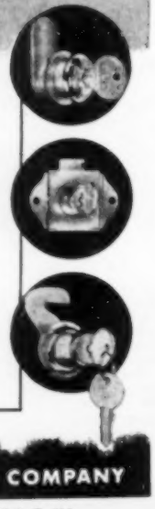
MILLING . . Machines and attachments, also lapping, grinding, broaching, forming, flame-hardening, cutter-sharpening machines. Bulletin M-1776, 52 pages. Cincinnati Milling Machine Co., Marburg & Kline Sts., Cincinnati 9, Ohio **IEN-01330**

MIXING . . Machine to mix sand and phenolic resin for the new foundry shell-molding process, based on the company's twin-shell dry blender. Bulletin 404, 4 pages. Patterson-Kelley Co., 385 Warren St., East Stroudsburg, Pa. **IEN-01331**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14006

IS THERE A "BEST CHOICE" IN LOCKS?



You bet there is . . . and it's DUO and ILLINOIS locks . . . with hundreds of styles and sizes in cabinet locks for wood or metal installations available for **original equipment** applications.

DUO LOCKS—Finest in lock quality—practically unlimited key specifications—virtually pick-proof—non-duplicatable style keys.

ILLINOIS LOCKS—Economy priced cylinder locks—many key changes—construction avoids failure due to dirt or freezing. Illinois lock engineers are always ready to cooperate with you in working out special locking problems. For complete service, call Illinois first.

ILLINOIS

THE ILLINOIS LOCK COMPANY

808 S. ADA ST. • CHICAGO 7, ILL.

If you write maker identify as IEN - 14007

Which Milling Cutter would you choose

✓ CHECK ONE

1. ____ a SOLID cutter with rigid tooth back-up.
2. ____ an INSERTED TOOTH cutter with replaceable blades.
3. ____ A MILLING CUTTER THAT COMBINES THE ADVANTAGES OF BOTH.

Check (3) and you've checked

THE NEW MILLIT

Millit's fully backed up blade is seated against a body abutment that absorbs all cutting forces.

This means Millit gives you both a rigid tooth back-up and replaceable blades.

Write for the Millit Folder today. Address:
Millit Div., Kraus Design, Inc.
33A Flint Street
Rochester 8, New York

If you write maker identify as IEN - 14008

this wrench

can slash your costs 3 ways

TAC Open End Ratchet Wrench

delivers incredible savings wherever "tight" situations prevail involving tubing, pipe, conduit, cable or long studs. Saves at least three ways:

1. **CUTS TIME** on production or maintenance operations because it slips around tubing and down fittings, where you ratchet off or on in mere seconds. Functions perfectly with as little as 7° arc clearance for handle. Reduces workman injury too—TAC can't slip off the work and skin up knuckles.
2. **CUTS COST** on fittings, tubing, etc. Snugs down on fittings, never "barks" or scars the hex fitting or strips thread.
3. **REDUCES INVENTORY OF HAND TOOLS** required in your tool crib. Several sockets, a few head sizes, and you eliminate over half the wrenches you'd otherwise maintain.

HERE'S HOW IT WORKS!

"BORROW" ONE—PROVE FOR YOURSELF!

Rated companies may request on Letterhead a sample handle, head and socket, for full trial. We ship on memo billing—returnable for full credit. ACT NOW—"BORROW" THIS MIRACLE WRENCH and prove its value!

Send for free catalog

TAC TUBING APPLIANCE COMPANY
10321 Anzo Avenue, Los Angeles, California

If you write maker identify as IEN - 14010

AUTOMATIC 3 ACTION

numbering machine

MODEL 150

3 movements — consecutive, duplicate, repeat. Triplicate or quadruplicate available in place of duplicate. Prefix letter wheels available in place of figures. Clear-cut figures, 6 wheels.

Write for catalog E

345678

Facsimile Impression

WM. A. FORCE
& COMPANY, INCORPORATED
216 NICHOLS AVE., BROOKLYN 8, N. Y.
Sales Offices: New York, Chicago, San Francisco, Montreal

If you write maker identify as IEN - 14011

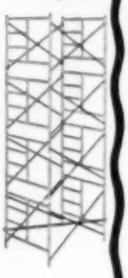
WORLD'S FASTEST, SAFEST SCAFFOLDING — WACO

ROLLING TOWERS
Speedy and simple for maintenance work!

SECTIONAL SCAFFOLDING
Saves hours in scaffold erection time!

BIG WACO FEATURES!

Only WACO features the original, proven "SPEEDLOCK". Speed, safety and convenience in scaffold assembly.



- Built-in, floating coupling pins
- Built-in ladders
- Pivoted cross-braces
- Heavy duty rubber tire wheels
- Brake-type casters

Phone your local WACO distributor today for a free demonstration. Distributors in all principal U.S. and Canadian cities.

Write for free file folder

WILSON-ALBRECHT CO., INC.
DEPT. 5, 2041 WOODDALE AVE.
MINNEAPOLIS 16, MINN.

If you write maker identify as IEN - 14012

use VANCO

UP-BLAST POWER ROOF *Ventilators*

For Removing:
EXCESSIVE HEAT
NOXIOUS FUMES
CORROSIVE GASSES
"DEAD" AIR
OCCUPATIONAL DUSTS
RAPIDLY
EFFICIENTLY
POSITIVELY

A Weather-Tight Automatic Opening and Closing Power Ventilator

Delivers Perfect Air-Flow Without Resistance

Send For Free Descriptive Bulletin

OTHER PRODUCTS
- Syphon Gravity ROOF VENTILATORS
- Superflo Continuous ROOF VENTILATORS

E. VAN NOORDEN COMPANY
ventilation designers and manufacturers since 1875
284 Magazine Street
BOSTON 19, MASS.

If you write maker identify as IEN - 14013

TRUCKS . . Engine drive fork lift 3 and 4 ton, operates in plant or yard

Source: HYSTER CO.
2616 N. E. Clackamas St., Portland 8, Oregon

Ask for Bulletins

Illustrated is Type ZA-80, one of two new engine driven fork lift trucks for operation both indoors and out in general material handling loading and unloading services. It rates a 4-ton load on 24-in. load center. It lifts this load to a standard 9 ft. at 35 fpm. employing its engine driven hydraulic pump equipment. It measures about 118 in. in overall length without its standard 48 in. forks. It operates in 99-in. intersecting aisles at forward speeds of 7.3 and 10.9 mph. and reverse speeds of 7 and 10.5 mph., based on governed engine speed of 2,400 rpm.

Type XA-60, the second of the two new units, rates 3 ton on 24-in. load centers. It also lifts this rated load at 35 fpm. with its hydraulic equipment to a standard height of 9 feet. It measures about 107 in. in overall length without the forks and is designed to operate in 86-in. intersecting aisles. Its two speeds forward are 8.1 and 12.5 mph. Its reverse speeds are 7.8 and 12 mph. based on 2,400-rpm. governed engine speed.

Construction includes a 12-in. single plate dry type clutch that can be removed and replaced in about an hour, heavy duty disc type industrial brakes in mechanically actuated self-energizing design, center point steering with pivots about the longitudinal vertical axis of the truck to maintain tire contact over rough ground surfaces, roller mounted hoisting mechanism with a floating hoist cylinder and single chain, provision for hydraulic tilt to both the front and rear.

If you write maker identify as IEN - 14014

PIPE . . Flexible and semi-rigid, polyethylene and butyrate plastics

Source: TRIANGLE CONDUIT & CABLE CO.
10 Codwise Ave., New Brunswick, N. J.

Ask for data booklet

Two new types of plastic pipe, made of flexible polyethylene and semi-rigid butyrate, have been added to the company's lines of conduit, wire and cable. The new flexible pipe is in three types, non-toxic, industrial and suction, in a range of sizes from ½ to 6 inches. It is supplied in coils. The semi-rigid pipe is made in 20-ft. lengths in the same range of diameters. It is sufficiently flexible to follow ditch contours.

Characteristics are light weight, smooth interior, immunity to rot, corrosion and electrolytic action and to attack by a variety of fluids which the company can name.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN - 14015

FOR ALL SMALL PARTS STORAGE

"E-Z-C" PLASTIC DRAWER CABINETS — with LARGER 2-INCH DEEP DRAWERS

Here's the newest, low-cost multi-purpose storage cabinet — strong enough to hold 15 drawers full of lead, yet minimum light in weight. The see-thru clear plastic drawers (¾" deeper than average size) show at a glance the parts or equipment they are storing. Increased convenience from the deeper drawers—15 drawers hold any and all parts, office supplies, etc.—for use in plant, office or home.

- Removable Dividers in Each Drawer
- Electric Weld All Steel Cabinet
- Name Plate Slot in Each Drawer
- Safety Catch Prevents Any Spilling

For a complete compact storage room, you can stack E-Z-C Cabinets up, side by side, or back to back. Send for descriptive literature.

KLEER-VUE MANUFACTURING CO.
636A PENN AVE.
PITTSBURGH 22, PA.

If you write maker identify as IEN - 14016

SAVE MORE TIME AND MONEY IN MATERIAL TIERING WITH THE PALTIER PYRAMID RACK

DESIGNED FOR YOUR PARTICULAR REQUIREMENTS

Exclusive self-aligning feature makes stacking quick and easy.

All steel units insure safety.

All Paltier pyramid racks are designed to meet your requirements regarding load capacity, dimensions, special framing and decking. Posts slip-fit into sockets are easily removed and can be replaced with posts of other lengths.

NESTING PYRAMIDS—available for YOUR RACKS
Paltier will furnish the self-aligning, nesting pyramids at reasonable prices for welding to your equipment. Fits any size post up to 3½ inches square.

SEND TODAY — FOR NEW FREE CATALOG DESCRIBING THE PALTIER SYSTEM FOR BETTER MATERIAL HANDLING

The PALTIER Corp.
1701 Kentucky St.
Michigan City, Ind.

If you write maker identify as IEN - 14017

Improved Method Centrifugal SPRAY DRYER *and* CONCENTRATOR*

CONTRACT DRYING
We invite inquiries for Contract Drying in our fully equipped, Stainless Steel Plant in Chicago. Shipments can be made direct to our Railroad Switch Track or Truck Docks.

THE DRYING AND CONCENTRATING COMPANY DRYER

Improved method for **DEHYDRATING**

Solutions, emulsions and materials which can be handled in a liquid form including:

Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

This complete spray drying plant employs a unique centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooler and Sanitary Pumps with variable speed drives for handling the liquid material and controlling the moisture.

***CONCENTRATOR AVAILABLE SEPARATELY**

The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining natural flavors and vitamins.

3639

DRYING and CONCENTRATING CO.
333 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

If you write maker identify as IEN - 14018

HARPER

Specialist in *all* Non-Corrosive Fastenings!

Call Harper *first!* America's largest producer of non-ferrous and stainless steel fastenings—specializing in bolts, screws, nuts, rivets, washers and accessories in brass, bronze, copper, aluminum, Monel, stainless steel—to solve your problems in corrosion, heat, abrasion and stress. Over 7,000 items stocked by warehouses and distributors from coast to coast.

FREE—*this 96-page Harper Price List and Stock Book.*

HARPER
EVERLASTING FASTENINGS

The H. M. Harper Company
8013 Lehigh Ave.
Morton Grove, Ill.
Rush Harper Price List and Stock Book.
Name.....
Address.....
City.....State.....

CALL HARPER FIRST!
For Bolts, Screws, Nuts, Rivets, Washers and Accessories in Brass, Bronze, Copper, Aluminum, Stainless Steel.

If you write maker identify as IEN - 14019

When is a lathe too big?

A lathe is too big when:

SHELDON
CHICAGO

(1) When it is too large and complex for any but the most experienced to operate safely.

(2) When the power cost is excessive for the tool load.

(3) When the tool investment is out of all proportion to the requirements.

(4) When it is too cumbersome and too slow.

(5) When it takes up floor space, heat and light in which output could be multiplied with smaller machine tools.

Modern Sheldon Precision Lathes eliminate these excessive costs and loadings on many everyday operations—leaving far more on the profit side. 10", 11" and 13" Swing. "Zero Precision" Tapered Roller Bearings. Increased collet capacity.

Write for Catalog

SHELDON MACHINE CO. Inc.

4208 N. KNOX AVENUE • CHICAGO 41, ILLINOIS, U. S. A.

If you write maker identify as IEN - 14020

Here's how Pangborn

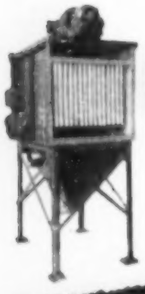
Solves these Problems

with this modern equipment

BLAST CLEANING!

Blast Cleaning Cabinet quickly and easily cleans metal parts of rust, grime, dirt, paint, etc. Produces a clean, smooth surface on pieces up to 60" x 36". Models available from $919.00 and up.

Blast Cleaning Machine not only removes rust, dirt, scale, etc., but is ideal for maintenance and many other uses. Cleans large objects such as bridges, structural work, tanks before painting. Six sizes, portable or stationary, from $170.00 and up.



DUST COLLECTING!

Unit Dust Collector stops dust at its source, minimizes machine wear and tear, reduces housekeeping and general maintenance costs. Solves many grinding and polishing nuisances. Reduces material losses. Models from $286.00 and up.

PRECISION FINISHING!

Hydro-Finish Cabinet uses liquid blast, eliminating dust and reduces costly hand polishing, cleaning and finishing of molds, dies, tools, etc. Removes scale, discoloration and directional grinding lines, prepares surfaces for plating and coating. Holds tolerances to .0001". Models from $1,410.00 and up.

LOOK TO PANGBORN FOR THE LATEST DEVELOPMENTS IN BLAST CLEANING AND DUST CONTROL EQUIPMENT

Pangborn

MAIL COUPON for full details

(Check for more information)
- Blast Cleaning Cabinets
- Blast Cleaning Machines
- Unit Dust Collectors
- Hydro-Finish Cabinets

PANGBORN CORP., 2300 Pangborn Blvd., Hagerstown, Md.

Gentlemen: Please send me more information on the equipment I've checked at the left.

Name .....
Company .....
Address .....
City ..... Zone ..... State .....

NEW LITERATURE—Continued

MOTOR CONTROL . . Type-CY ac. motor starter in ratings through NEMA Size 3; color-coded pictures on power circuit and arc extinguishing "Type CY", 8 pages. Clark Controller Co., 1144-48 E. 152nd, Cleveland 10, Ohio. **IEN-01332**

MOTORS . . Color-coded arrows on transparent overlay show flow paths of cooling air inside Type-T dc. motor and in heat exchanger. Bulletin C 2201, 6 pages. Reliance Electric & Eng. Co., 1111 Ivanhoe Rd., Cleveland 10, Ohio. **IEN-01333**

PACKAGING . . Plastic liners for shipping containers from 1 to 55 gal. to keep bulk material clean and free from moisture and contamination. "Plastic Liners", 4 pages. Hedwin Corp., 3616-20 Falls Road, Baltimore 11, Md. **IEN-01334**

PIPE . . And tube of Croloy 18-8 Ti stainless steel; short-time elevated temperature properties, creep strength, stress values. Bulletin TDC-144, 4 pages. Babcock & Wilcox Co., 4027-31 Fourth Ave., Beaver Falls, Pa. **IEN-01335**

PIPE FITTINGS . . Corrugated expansion joints, also flexible metal hose; sizes, dimensions, ratings, installation suggestions, length computation. Catalog CMH-128, 16 pages. Flexonics Corp., 1333 S. Third Ave., Maywood, Ill. **IEN-01336**

PLASTICS . . Condensed reference information on Bakelite and Vinylite plastics and resins for molding, coatings, packaging, insulating. Bulletin G-19, 16 pages. Bakelite Co., 30 E. 42nd St., Dept. 1503, New York 17, N. Y. **IEN-01337**

PLASTICS . . Shatterproof pipe and fittings, ½ to 2 in., also molded parts, tanks, fume duct, cutting boards, all "Indestructible" plastic. Booklet NY-2260, 8 pages. New York Belting & Packing, 3 Market St., Passaic, N. J. **IEN-01338**

PRESSES . . Detail comparison of press numbers for Bliss, Toledo and Consolidated presses to bring you up to date on designations. "Comparative Presses", 32 pages. E. W. Bliss Co., 1373-77 Raff Road S. W., Canton 10, Ohio. **IEN-01339**

PRESSES . . Power presses from 3 to 18 ton, arbor presses from ½ to 15 ton, also air presses, drill presses, band saw machines, squaring shears. Catalog GC-652, 8 pages. Famco Machine Co., 3108-12 Sheridan Rd., Kenosha, Wis. **IEN-01340**

PRINTING . . Copyflex Model 14 machine to copy printed forms up to 20 in. in width; 4-step operating sequence, suggestions on use in the office. Bulletin A-2042, 8 pages. Charles Bruning Co., 123-27 North St., Teterboro, N. J. **IEN-01341**

PROCESSING . . Wood tanks, tubs, vats, sinks for industrial process and storage uses; capacities of standard units, suggested uses, fittings. Catalog 22, 4 pages. Wendnagel & Co., 602 W. Cermak Road, Chicago 16, Ill. **IEN-01342**

PUMPS . . Guide to selection of company's centrifugal pumps by liquid handled, by type and size, by special application. Bulletin 52-C-6050J, 12 pages. Allis-Chalmers Mfg. Co., 900 S. 70th St., Milwaukee 14, Wis. **IEN-01344**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14022

NO TIE RODS OR SPACE-EATING END CAPS

O-M CYLINDERS
air water hydraulic

pack MORE POWER in less space!

14-DAY DELIVERY . . . On Most Sizes
Available in 1½" to 8" Bores

Easy to Install. Internal locking process eliminates tie rods and bulky end caps. Cuts installation space almost in half. Permits use of more power for the job. All machined steel with bearing bronze, no castings. Completely interchangeable parts. Write today for FREE catalog and complete set of ½ scale templates showing all cylinders and mounting brackets.

FREE CATALOG and Templates

ORTMAN MILLER MACHINE CO.
1208 150th St. Hammond, Indiana

If you write maker identify as IEN - 14023

Are You Up Against a Tough Sealing Problem?

Our specialty is ***plastic*** compounds for industry... compounds used for sealing pipe joints, for caulking, bedding, glazing, etc. . . . compounds that withstand high temperatures and all solvents including acids . . . ***plastic*** compounds that STAY ELASTIC giving long service. Write us about YOUR sealing problems. We are equal to any requirements no matter how "special."

ACID RESISTANT CEMENTS

HI-HEAT COMPOUNDS

FURNACE AND BOILER CEMENTS

CHLORO-Seal

Chlorine producers save money using this famous plastic compound for sealing in and out pipe and cover joints in chlorine cell operations. CHLORO-Seal stays ELASTIC. It gives permanent protection—providing a cushion seal that won't crack or chip off due to expansions and contractions. Good for temperatures to 300 F. Try CHLORO-Seal for perfect satisfaction!

The ARMSTRONG COMPANY
241 S. Post Street, Detroit 17, Mich. EST. 1911

If you write maker identify as IEN - 14024

The Simpson Model 260 Volt-Ohm-Milliammeter Outsells All Others Combined Because

- **A** covers all ranges necessary for Radio and TV set testing
- **B** includes the Simpson 50 Microampere Meter Movement known the world over for its ruggedness
- **C** no bulky harness wiring, thus eliminating all intercircuit leakage at this high sensitivity
- **D** molded recesses for resistors, batteries, etc.
- **E** easy battery replacement
- **F** covered resistors to prevent shorts and protect against dust and moisture

● All components—including case and panels—are specially designed and completely tooled for maximum utility . . . not merely assembled from stock parts

SIMPSON ELECTRIC COMPANY
5200 W. Kinzie St., Chicago 44, Illinois • Phone: COlumbus 1-1221
In Canada: Bach-Simpson, Ltd., London, Ont.

If you write maker identify as IEN - 14026

New

HARTWELL PUSH BUTTON FLUSH LATCH H-4100

Functional First... Attractive Always...

HARTWELL sets a new pattern for the future with efficient, economical *push button* latches that are FLUSH—SELF-CLOSING—EASY TO OPERATE—SIMPLE TO INSTALL.

These modern latches are operated by a natural rotation of the hand for push and lift positive action. As the forward button is depressed, the rear button raises, providing a sturdy grip for opening the door.

Ideal for commercial, industrial, automotive, aircraft, marine and railroad applications.

Write for engineering specifications and counsel.

HARTWELL COMPANY

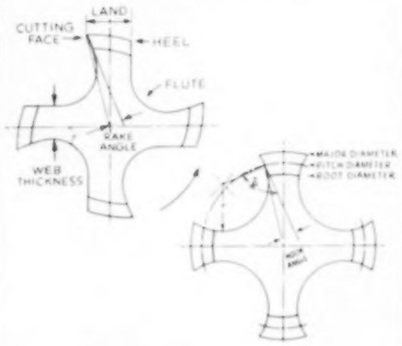
Manufacturers of Flush Latches and Hinges, Fittings and Cable Terminals.

9035 VENICE BOULEVARD, LOS ANGELES 34, CALIFORNIA

If you write maker identify as IEN - 14027

USE THE RIGHT TAP

(HOW TO DO MORE TAPPING WITH FEWER TAPS)



IMPORTANCE OF FLUTE FORM

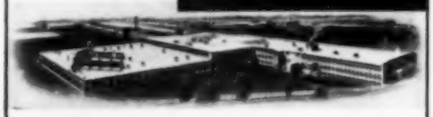
THE FLUTE IS ONE OF THE MOST IMPORTANT ELEMENTS OF A TAP BECAUSE EACH THREAD IN THE CHAMFERED SECTION FORMS A CUTTING EDGE WHERE IT MEETS THE FLUTE. ALSO, THE FLUTE IS USUALLY THE ONLY SPACE FOR CHIP REMOVAL. IT IS OF PRIMARY IMPORTANCE THAT THE FLUTE SURFACE BE HIGHLY POLISHED AND THAT ITS SIDE HAVE THE RIGHT RAKE ANGLE IF STRAIGHT, OR HOOK ANGLE IF CURVED. TAPS SHOULD BE SHARPENED BEFORE THEY ARE DULL. GREAT CARE SHOULD BE TAKEN TO NOT OVERHEAT THEM IN GRINDING. THE GENERAL SHARPENING RULE IS: LITTLE OR NO HOOK FOR CAST IRON, CAST BRASS OR OTHER CRUMBLY MATERIALS BUT STRONG HOOK ANGLES OF 15° TO 20° FOR TOUGH STRINGY MATERIAL LIKE ALUMINUM, COPPER, ETC.

TAPS CHAMFERED FREE-HAND ARE SURE TO BE UNEVEN OR ECCENTRIC AND IN USE THE CUTTING LOAD WILL BE CONCENTRATED. SUCH TAPS WILL BREAK IF SMALL. A LARGER, STRONGER TAP MAY NOT BREAK BUT WILL DULL QUICKLY AND IN A RIGID CHUCK WILL PRODUCE A BELL-MOUTH HOLE OR AN ECCENTRIC THREAD.

SHARPENING ON A GOOD CHAMFERING MACHINE IS ESSENTIAL FOR REAL TAPPING ECONOMY.

THREAD MORE HOLES WITH FEWER TAPS INSIST ON...

HY-PRO TAPS



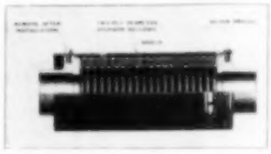
HY-PRO TOOL COMPANY

NEW BEDFORD, MASS., U. S. A.

If you write maker identify as IEN - 14029

PIPE FITTING . . Expansion joint, bellows design for copper heating lines

Source: FULTON SYLPHON DIVISION
2451 W. Cumberland Ave., Knoxville 16, Tenn.



For Baseboard lines

Seamless bellows, made of copper silver-brazed to two solder end fittings, is enclosed within a protecting shield in this new No. 180006 expansion joint. When the unit is shipped the left-hand movable end fitting is secured in the shield by a screw to prevent handling damage to the bellows. This screw is removed following installation, so the expanding action is free within the shield.

The fitting is designed for use in hot water heating lines to radiators and convectors. It is available in four sizes from ¾ to 2 inches. It absorbs ½ in. of expansion and contraction, sufficient for 30 ft. of pipe line on a 140-deg. temperature difference or 40 ft. on 110 degrees. Maximum working pressure is 40 pounds. Maximum test pressure is 60 pounds.

If you write maker identify as IEN - 14030

WELDING . . Copper alloy electrode and flux coating to arc weld copper

Source: KREMBS & CO.
667-71 W. Ohio St., Chicago 10, Ill.

For a strong ductile weld

Kop-R-Arc trade names a new coated electrode that is employed with a supply of the same electrode material, known as Fluxine, to coat a work area on both sides of a weld line. The company has prepared instructions with which the electrode and the flux are applied to make a first class arc weld on copper or copper alloys. The electrode itself is a copper silver alloy. It is available in sizes ranging from $\frac{1}{16}$ to ½ inch.

If you write maker identify as IEN - 14031

MARKING . . Wheel type tool makes ink impression on work surface

Source: JET MFG. CO.
286-90 Hyde Park Ave., Dept. IEN, Boston 30, Mass.

About $30

Ink is stored in the reservoir handle of this new tool. It feeds to a transfer roll and from there to the type equipped marking wheel. The tool is held in an operator's hand and is rolled along a surface to make one or a repeated marking. Roller Line Marker is the designation.

Each unit is made to specification. The one shown in the illustration weighs 3 lb., measures 15 in. in length and employs a 5-in. type wheel which is interchangeable at a cost of about $7 plus cost of type.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14032

DC *Continuous Duty*

SOLENOIDS

6, 12, 24, 32 VOLTS • 10 LB. PULL OVER ½"

For operating throttles, chokes, fuel pump racks, anti-dieseling devices, or any application not requiring more than 10 lbs. pull over ½" stroke. Ruggedly constructed and entirely enclosed for dust and splash proof operation. It is furnished with a mounting bracket and threaded plunger for connecting to operating linkage.

Overall length, plunger out, 4½". Overall width of mounting ears 3⅞". Weight 2½ lbs. Special plungers can be supplied if required.

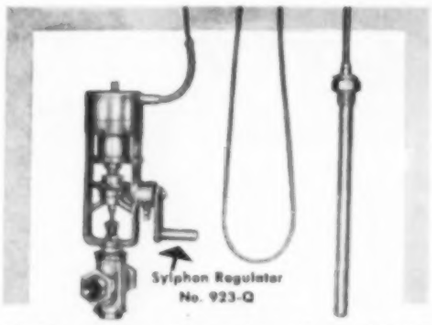
COMPACT • DUST PROOF • LIGHT WEIGHT

SYNCHRO-START PRODUCTS, INC.

Automatic Engine Control Equipment

8151 N. RIDGEWAY AVE. • SKOKIE, ILL.

If you write maker identify as IEN - 14033



Makes temperature to order...fast!

Simple turn of the crank adjusts temperature to the setting desired . . . easier, more accurate than conventional hand-wheel type regulators, especially for batch processing. Ideal for process control; used with open and closed tanks, bottle washers, glue kettles, slashers, etc. Rugged, reliable, neat, compact. Write for Catalog XN-A.

FULTON SYLPHON
DIVISION

ROBERTSHAW-FULTON CONTROLS CO. • • KNOXVILLE 4, TENN.

Temperature Controls • Bellows Devices • Bellows Assemblies

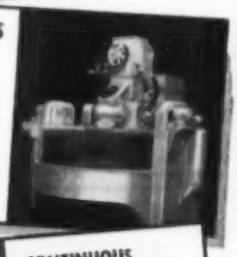
Canadian Representatives, Darling Brothers, Montreal

If you write maker identify as IEN - 14034

Let PANGBORN Solve your Blast Cleaning Problem!

BATCH Cleaning: For top-economy batch cleaning specify Pangborn ROTOBLAST* Barrels. Sizes available from 3½ to 28 cubic feet. All models have push-button operation, automatic abrasive recovery and automatic loading device.

SEMI-CONTINUOUS Cleaning: Specify Pangborn ROTOBLAST* Tables. Type LF cleans flat castings; type LG cleans intricate pieces. Type LH, with two tables, lets operator load one table while work is cleaned on the other.



CONTINUOUS Cleaning: Pangborn Continuous-Flo ROTOBLAST* Barrels and one man provide uninterrupted cleaning. Loading and unloading is automatic, work is cleaned as it moves through Barrel.

Pangborn offers ROTOBLAST* equipment for every cleaning need. Full details on Tables, Barrels, Table-Rooms and Rooms are included in Bulletin 214. For your free copy *Mail Coupon Today!*

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control equipment.

Pangborn

**Trademark of Pangborn Corporation*

BLAST CLEANS CHEAPER with the right equipment for every job.

PANGBORN CORP., 2300 Pangborn Blvd., Hagerstown, Md.

Gentlemen: Please send me Bulletin 214 without obligation.

Name.....

Company.....

Address.....

City.....Zone.....State.....

If you write maker identify as IEN - 14036

Camachine

SLITTERS AND ROLL WINDERS

If you want fast, low cost production of top-quality rolls of paper, plastics, textiles, rubber, and other plain, coated, laminated or tacky-surfaced materials . . . it will pay you to investigate Camachines!

26-3A, a popular CAMACHINE featuring differential rewinding and positive roll separation. Rolls produced on the 26-3A are ideal for further processing, or for consumer use.

Bulletin 1010 will be sent on request

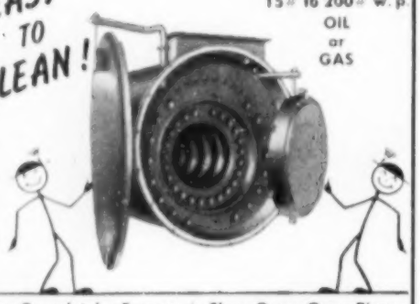
Cameron Machine Company • 61 Poplar Street • Brooklyn 2, N. Y.

If you write maker identify as IEN - 14037

AMESTEAM GENERATOR

EASY TO CLEAN!

10 to 500 h.p.
15# to 200# w.p.
OIL or GAS



To Completely Expose Furnace and All Tubes . . . Open One-Piece Rear Flue Cover . . .

Then Open One-Piece Rear Baffle. There are Ample Clean-Out Doors in Front End, too!

AMES IRON WORKS
BOX 1-12, OSWEGO, N. Y.

Builders of Better Boilers Since 1848

If you write maker identify as IEN - 14038

FOR USERS OF RUBBER

Helpful Data—on Rubber and Rubberlike Materials

Here . . . in handy form . . . is quick-reference data for users of rubber in its various natural and synthetic forms. Properties of materials are compared in relation to typical applications. A special booklet on silicone rubbers is included. Send for this useful information.

Fill in Below — Attach to your Company Letterhead and Mail

THE OHIO RUBBER CO.
122 Ben Hur Avenue, Willoughby, Ohio

Please send me your data on rubber and rubberlike materials. I understand that this request involves no cost or obligation to our company or to me.

PLEASE PRINT

NAME
COMPANY
ADDRESS

NEW LITERATURE—Continued

SAWING . . Circular sawing machines for round solid stock to 36 in. in diameter in steel, titanium, magnesium; also saw blades. Bulletin 7-Mo, 4 pages. Motch & Merryweather Machinery Co., 715 Penton Bldg., Cleveland 13, Ohio **IEN-01345**

SAWING . . Keller power hack saw machines with capacity from 3½ by 3½ in. to 9 by 9 in. in 10 models including two new machines. Bulletin 1052, 4 pages. Sales Service Machine Tool, 2361-65 University, St. Paul 14, Minn. **IEN-01346**

SCAFFOLDS . . "Fold-A-Way" aluminum scaffolds based on folding one-piece sections; illustrated assembly steps, specifications. Bulletin ASF-1, 4 pages. Patent Scaffolding Co., 38-23 12th St., Long Island City 1, N. Y. **IEN-01347**

SEALING . . Palmetto packings in sheet and rod types, including one of braided Teflon, also gaskets, asbestos materials, summarized on a chart. Catalog PC-102, 20 pages. Greene, Tweed & Co., 342 Elm, North Wales, Pa. **IEN-01348**

SIGNALING . . Sight flow indicators for liquids in pipe lines; operating considerations on flapper, rotary, ball types. Bulletin 18-W, 12 pages. Schutte & Koerting Co., 952 State Rd., Dept. M-B, Cornwells Heights, Bucks Co., Pa. **IEN-01349**

STAMPINGS . . Electrical laminations in special oriented steel with Carlite surface-treatment insulation; actual-size drawings. Bulletin L-752, 24 pages. Thomas & Skinner Steel Products Co., 1172 E. 23rd St., Indianapolis 5, Ind. **IEN-01350**

STEELS . . Ground flat stock in an oil-hardening tool steel; list prices on 239 sizes 18 and 36 in. in length, heat treating instructions, analysis. Bulletin 52-S-3, 4 pages. DoAll Co., 252-59 N. Laurel Ave., Des Plaines, Ill. **IEN-01351**

STRAPPING . . Power-operated dispenser to pay out a desired length of ¾ to 2-in. steel strapping and then to cut it off. Bulletin SPD-61, 4 pages. Signode Steel Strapping Co., 2000 N. Western Ave., Chicago 47, Ill. **IEN-01352**

TACHOMETERS . . Electric instruments for rotation or linear travel speeds; how to choose the magneto drive; indicators, recorders, charts. Bulletin S-1402, 20 pages. Bristol Co., Griggs & Kelsey Sts., Waterbury 20, Conn. **IEN-01353**

TESTING . . Portable electronic stethescope with a metal probe to pick up noise from a machine and to locate its source. Bulletin, "Elec-Detec", 4 pages. Anco Instrument Div., 4252-56 W. Arthington St., Chicago 24, Ill. **IEN-01354**

TESTING . . X-ray accessories and supplies from films and chemicals to radiation protection for the operator. Accessories Catalog, letterhead request please, 104 pages. Keleket X-Ray Corp., 225 W. 4th St., Covington, Ky. **IEN-01356**

TESTING . . Temperature altitude, and humidity test cabinets for product performance from minus 165 to plus 350 deg. F., also industrial freezers. Folder, 8 pages. Webber Appliance Co., 2738-42 Madison, Indianapolis 3, Ind. **IEN-01357**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14039

This book on AMSCO DREDGE PUMPS can help cut costs in your Dredging Operations

More and more operators are turning to Amsco Dredge Pumps made with manganese steel—the toughest steel known—in order to save time, money, and materials in their dredging operations.

This book tells you where the real savings can be made and how you can make them. Write for booklet 1052-P.

American Brake Shoe Company — AMERICAN MANGANESE STEEL DIVISION
401 EAST 34th STREET • CHICAGO HEIGHTS, ILL.

If you write maker identify as IEN - 14040

speaking of ACCURACY...

Logan Has it!

Logan No. 955 QUICK CHANGE GEAR LATHE
11" Swing, 1" Collet Capacity, 1⅝" Spindle Hole

PRECISION RESULTS have made the Logan Lathe one of the world's most widely used machine tools. Logan advanced design and rugged, precise construction assure accuracy that stands up under hard use. Because the Logan ball bearing spindle needs no adjustment for any speed from 45 to 1500 rpm, original accuracy is preserved. The two V-ways and two flat ways of the Logan bed are precision ground to a tolerance of .0005", and are warp-free. 11" swing, 1" collet capacity and 1⅝" spindle hole provide the capacity for a high percentage of any shop's metal turning. Remember, too, no other lathe of comparable specifications can match Logan economy. *Write for Catalog.*

LOOK TO LOGAN FOR BETTER LATHES AND SHAPERS

LOGAN ENGINEERING CO.
4901 West Lawrence Avenue, Chicago 30, Illinois

If you write maker identify as IEN - 14041

PERFECT HOLES

• A NEW INVENTION!
• A NEW MACHINING METHOD! ROTARY BROACHING*
• A NEW NAME "ROTARY BROACH"*

ROTARY BROACHES may be used in lathes, turret lathes, automatics, drill presses, etc., to replace reamers. They produce perfect holes with finishes that can only be compared to honing. They last longer before grinding is necessary and may be resharpened 10 to 30 times. They produce perfect holes at a fraction of the cost of those produced by other methods. Eliminates grinding, lapping, honing and boring.

USE THIS NEW MACHINING METHOD—ROTARY BROACHING*
You Cannot Afford Not To Use Rotary Broaches (Write for free descriptive literature)
* "Rotary Broach" and "Rotary Broaching" are new names coined and copyrighted by Shearcut Tool Company
Patented in Canada U.S. and Foreign Patents Pending © 1947

When you want Perfect Holes, consult
SHEARCUT TOOL COMPANY
Box 746, Dept. IEN-122 • Reseda, California

If you write maker identify as IEN - 14042

PREVENTIVE MAINTENANCE eliminates truck downtime

READY-POWER IS BEST FOR PREVENTIVE MAINTENANCE

Tie up a truck because of power failure? Never! Equip your fleet with *interchangeable* Ready-Power gas-electric units and, then, have one extra for the shop. Thus, power units can be rotated for preventive maintenance . . . and your trucks stay *ON THE JOB.*

The READY-POWER Co.
3850 Grand River Ave., Detroit 8, Michigan
Manufacturers of Gas and Diesel Engine-Driven Generators and Air Compressors Units, Gas and Diesel Electric Power Units for Industrial Trucks

If you write maker identify as IEN - 14043

PRODUCTION PICK-UP:

ELECTROLIFT
worm drive hoist

Watch your production pick up with these time-saving, manpower-saving hoists. You can move materials faster, smoother, quieter with ElectroLift.

Wide variety of one-man models, for safe movement of loads up to 6 tons. Available with push-button control for pin-point accuracy.

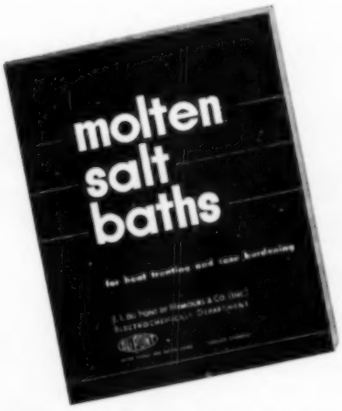
For further features write for Bulletin 36, or consult your ElectroLift representative listed in telephone directory.

ELECTROLIFT

ELECTROLIFT, INC., 30 CHURCH ST., NEW YORK 7, N. Y.

If you write maker identify as IEN - 14044

NOW...complete information on case hardening and heat treating salt baths



You'll find all these features in this new 75-page Du Pont manual:

- **Complete descriptions** of salt baths for cyaniding, carburizing, heat treating and quenching.
- **Detailed information** on salt baths for special applications—cyanide reheating and nitriding, hydride descaling and heat coloring.
- **Data on how** salt baths are prepared and controlled . . . results that can be produced . . . charts and photomicrographs showing the heat treating and case hardening properties of S.A.E. steels.
- **Tables of** salt bath formulations and replenishment equivalents.

FROM COVER TO COVER *this new manual is packed with information for all types of metal processors. Be sure there's a copy in your file for reference.*

MAIL THE READER SERVICE COUPON FOR YOUR COPY

DU PONT CYANIDES AND SALTS for METAL TREATING

DU PONT

150th Anniversary

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

If you write maker identify as IEN - 14046

ELEVATOR . . Portable design to lift and stack 8 ton steel coils

Source: LEWIS-SHEPARD PRODUCTS INC.
190 Walnut St., Dept. R-1, Watertown 72, Mass.

A special design

A coil of steel that is to be raised and stacked is picked up by a standard ram truck and deposited on the concave hinged platform of this new special elevator. It will lift the coil through a 27-in. vertical movement and will discharge it when the operator moves a push-pull handle to tilt the platform upward.

The tilting section measures 24 in. in width by 44 in. in length. The elevator will handle coils of steel ranging from 24 to 56 in. in diameter. It is equipped with a 5-hp. hoisting unit operating on 440-volt 3-phase 60-cycle ac.

If you write maker identify as IEN - 14047

GEARS . . Made of powdered metal, iron or steel base, sizes to 4 inches

Source: MICHIGAN POWDERED METAL PRODUCTS CO.
50 Industrial St., Northville, Mich.

Precision molded

The company announces availability of precision gears, made by molding powdered metal, on a contract basis. The finished gears can be hardened. They also can be impregnated with oil. Sizes are to specification from very small units to a maximum outside diameter of about 4 inches.

If you write maker identify as IEN - 14048

VALVE . . Cam lever operated, seals vacuum, pressure, to 1,000 pounds

Source: HOKE INC.
203 S. Dean St., Englewood, N. J.

Positive closing

New valve, with a brass or stainless steel body and a seat made of semi-hard plastic, has been added to the company's Toggle line in a ½-in. size with internally threaded ends. The stem is sealed with a synthetic rubber O-ring. The cap nut can be adjusted so the valve seat is closed tight when the cam lever is perpendicular to the stem. A set screw in the cap nut locks and positions the yoke so the lever can be rotated to a desired plane with reference to the valve body.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 68

If you write maker identify as IEN - 14049

NEW PROJECTION TYPE WEIGHT INDICATION

77 HOWE Weightograph

Here is the latest development in automatic scale indication!—The new HOWE 77 WEIGHTOGRAPH—a weighing accessory which can be attached to any make of beam scale. Modern optical projection and eye-level periscope instantly flash exact weight in large, illuminated, crystal-clear figures under all sorts of light including daylight. Check the many "plus" features of the 77 HOWE WEIGHTOGRAPH for simple, fast, accurate and trouble-free weighing on your beam scale.

Write for descriptive folder Form No. 668 **Dept. IE-12**

The HOWE SCALE Co.
RUTLAND, VERMONT

If you write maker identify as IEN - 14050

Boost Your Machine Output With This G-E Time Meter

KT TIME METERS . . .
- Record operating time in hours, tenths of hours, or minutes.
- Reveal exactly how much work your machines are doing.
- Enable you to reschedule work and plan repair schedules more efficiently.
- Are easily installed; portable, panel, and conduit models available.

Contact Your Nearest G-E Sales Office. General Electric Co., Schenectady 5, New York. 103-130

GENERAL ELECTRIC

If you write maker identify as IEN - 14051

TORCH-O- Says:

"I'm trigger controlled for faster, easier soldering—brazing—melting"

Torch-o-matic saves time—saves gas! Just pull the trigger and air-acetylene gas automatically ignites—release trigger and gas shuts off instantly. No hazard from open flame when not in use. One-hand operation with no "time-out" to light up and adjust. Pays for itself many times over in savings and convenience. Three sizes of tubes and nozzles take care of any job. Fits your present equipment. Write for complete details.

DEALERS WANTED: *Some territories still open—act now!*

VELOCITY POWER TOOL COMPANY
7505 Thomas Boulevard • Pittsburgh 8, Pa.

If you write maker identify as IEN - 14052

GET THIS BOOKLET!
Find out how these valves can save you money!

This new publication tells how to cut your operating costs! Rockwood Ball Valves assure you . . .

1 *Full round flow.* Minimum friction loss.
2 *No Maintenance.* Engineered to stand up under an anticipated daily grind.
3 *Quick, sure opening and closing* . . . needs only a quarter turn, even under full pressure.
4 *Leakproof operation.* They *stay* leakproof.

Read the full details on these outstanding valves in illustrated Bulletin V-4. See for yourself why industry after industry specified Rockwood valves. Used in chemical, paper, textile, petroleum, food and other fields where continuous operation is important. Write today for your copy of free booklet. Rockwood Sprinkler Company, (40) Harlow Street, Worcester 5, Mass. Distributors in all principal cities

ROCKWOOD

Tested by Underwriters' Laboratories, Inc.

ROCKWOOD BALL VALVES
THE FLOW IS AS ROUND AS THE PIPE ITSELF

If you write maker identify as IEN - 14053

REALOCK FENCE

gives **locked-in** protection

All fittings on Realock Fence have bolts so placed that nuts cannot be removed from the outside. This means that Realock Fence provides *added protection* for your grounds and property . . . effectively discourages tampering by would-be trespassers.

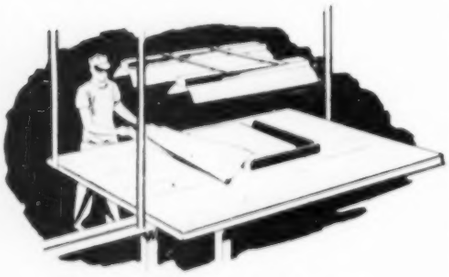
Strongly constructed, Realock Fence has high resistance to the elements because of a special galvanizing process . . . gives permanent protection and trouble-free service year after year. For additional information write our nearest sales office or consult your classified telephone directory.

THE COLORADO FUEL & IRON CORPORATION – Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION – Oakland, California
WICKWIRE SPENCER STEEL DIVISION – Buffalo, New York

REALOCK FENCE
THE COLORADO FUEL & IRON CORPORATION
CF&I
BRANCHES IN ALL KEY CITIES

If you write maker identify as IEN - 14054

BETTER TABLES AT LESS COST



GPX® PLASTIC-FACED PLYWOOD

More and more industrial table users are finding the answer to their problems in GPX plastic-faced plywood. It's smooth and snag-proof . . . hard and abrasion resistant . . . dielectric and resistant to water, organic solvents and acids, too. GPX wears for years under the hard punishment that industrial tables have to bear. And its cost is far lower than comparable materials.

GPX is made from top-grade solid core Douglas Fir Plywood surfaced with a phenolic resin overlay under heat and pressure. Check with your G-P representative for complete details or mail coupon, today!

A FEW PROVEN USES OF GPX—Match plates • Concrete forms • Industrial tables, Benches, Lockers • Interior & Exterior walls for freezers • Ducts • Drying boards • Humidity chambers • Freight cars • Exterior siding • Hobbies & crafts • Truck trailers • Anti-slip flooring.

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614-12A North Capitol Way, Olympia, Wash.

OFFICES OR WAREHOUSES IN: Augusta, Birmingham, Boston, Chicago, Cleveland, Columbia, Detroit, Houston, Lancaster, Los Angeles, Louisville, Memphis, Nashville, Newark, New Hyde Park, New Orleans, Olympia, Orlando, Philadelphia, Pittsburgh, Providence, Raleigh, Richmond, Savannah, Vineland.

For complete data, fill in and mail this coupon *today*

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Please send me the GPX Use Folder
NAME .....
FIRM NAME .....
.....
FIRM ADDRESS .....
CITY ..... STATE .....
POSITION .....

NEW LITERATURE—Concluded

THERMOMETERS . . Temperature-recording instruments, round-chart design, minus 450 to plus 1,000 deg. F. range; comparison on thermal actuation methods. Bulletin 447, 20 pages. Foxboro Co., 42 Neponset, Foxboro, Mass. **IEN-01358**

THERMOMETERS . . Dial-type units, vapor-tension Bourdon-tube design, in rigid stem and distant-reading models from minus 40 to plus 350 deg. F. Catalog 76-T, 30 pages. Marsh Instrument Co., 3503 Howard St., Skokie, Ill. **IEN-01359**

TRUCKS . . Spacemaster electric fork trucks, Jackstacker walkie fork trucks, Jacklift hand and electric trucks, Powermaster portable elevators. Circular 80-200, 4 pages. Lewis-Shepard, 190 Walnut, Watertown 72, Mass. **IEN-01360**

TRUCKS . . Gasoline-engine power plant of the company's lift truck described as to major features including the Degasser fume eliminator. Folder LMF-3, 12 pages. Towmotor Co., 1224-28 E. 152nd St., Cleveland 10, Ohio **IEN-01361**

TUBES . . Flexible metal hose in seamless corrugated and strip-wound designs; properties of each, sizes, fittings, examples. Catalog CC-400, 16 pages. American Brass Co., American Metal Hose Branch, Waterbury 20, Conn. **IEN-01362**

VALVES . . "Pressure-Seal" stop, check, non-return valves for 600 to 2,500-lb. service; dimensions, materials, pressure-temperature ratings. Catalog 12-H, 16 pages. Edward Valves Inc., 1235 W. 145th St., East Chicago, Ind. **IEN-01363**

VALVES . . Pressure-regulating, diaphragm-operated, liquid-level and other control valves, also traps, filters, strainers; data summaries. Catalog SW, 12 pages. Fisher Governor Co., 100 Fisher Bldg., Marshalltown, Iowa **IEN-01364**

VENTILATING . . Flexible collapsible duct made of coated fabric with spiral wire reinforcing, 4 to 30 in.; pictures show types and uses. Catalog C2-3, 4 pages. Flexible Tubing Corp., 10 Glendale Ave., Guilford, Conn. **IEN-01365**

VENTILATING . . Illustrated summary on fans and blowers in the company's line with references on available detail literature for each type. Bulletin 501, 4 pages. Robinson Ventilating Co., 1948 Harmony St., Zelienople, Pa. **IEN-01366**

VENTILATING . . Centrifugal blowers to handle air, dust and chips, shavings and fibrous materials, also elevated-temperature models. Bulletin SA-6873, 12 pages. Westinghouse Electric Corp., 202 Readville St., Boston 36, Mass. **IEN-01367**

WEIGHING . . Single-pan analytical balance, 20 to 200 grams in 3 models that can make a weighing in 20 seconds. "Gram-Matic Balance", 8 pages. Fisher Scientific Co., 719 Forbes St., Pittsburgh 19, Pa. **IEN-01368**

WIRE ROPE . . How to lubricate it, attach clips, figure loads, mount a socket, standard types, ratings. Catalog G, 24 pages. E. H. Edwards Co., Industrial Way & Butler Rd., South San Francisco, Calif. **IEN-01370**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14056

EVERY SHOP NEEDS THIS
LOW-COST PRECISION MILL!

BENCHMASTER
LOW COST MILLING MACHINE
does the work faster, easier, accurately, and economically!
MILLS VERTICALLY OR HORIZONTALLY by changing spindle assemblies. DRILLS, GRINDS, TURNS. Chatter-free, long life, high-precision.
Write for FREE literature.

benchmaster PUNCH PRESSES AND MILLERS
1835 West Rosecrans Avenue, Gardena, California

If you write maker identify as IEN - 14057

Fire Alarm Systems for OUTSTANDING DEPENDABILITY

Designed to operate unfailingly when needed, even years after installation, Couch Fire Alarm Systems assure positive, dependable protection of life and property.

If your plant requires:
- a simple evacuation alarm
- a coded alarm which locates the fire
- a tie-in with municipal alarms

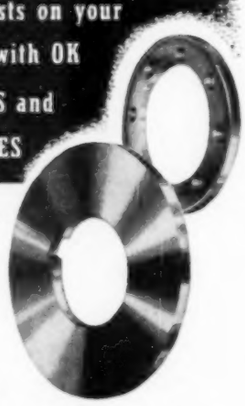
Couch Fire Alarm Systems are the ideal solution. Write today for Bulletin 5211.

Simplified Systems of Communication
S.H. Couch Company, Inc.
NORTH QUINCY 71, MASSACHUSETTS

If you write maker identify as IEN - 14058

it's OK ...let'er go!

cut costs on your toughest jobs with OK SHEAR BLADES and SLITTER KNIVES



Heat Treating does it. Gives them maximum toughness and keen edge holding qualities. You get longer runs between re-grindings.

OK Battle Axe Shear Blades for shearing up to and including ¼" mild steel or equivalent.

OK Dura-Chrome Shear Blades for shearing hot or cold plate steel up to 1¼" or equivalent.

OK Standard Shear Blades for any type shearing when only short runs or little shearing is done; also for heavy plate shearing.

OK Gang Slitters for slitting steel, precision ground to ± .0002 tolerances.

OK Rotary Shears and Cutters for trimming sheet steel and light plates.

Write today giving quantity and sizes.

WITH OHIO GREEN

THE OHIO KNIFE CO.
CINCINNATI 33, OHIO

If you write maker identify as IEN - 14060

IT'S A RANDOLPH!

From Bracket to Blaze in split seconds! No valves to turn, no nozzles to adjust; just point and press your thumb and Randolph's cloud of snowy CO_2 kills fire instantly. Non-damaging, non-toxic, won't conduct electricity, deteriorate or freeze. A complete line of extinguishers. Underwriters' approved. Write for catalog to RANDOLPH LABORATORIES, INC. 6 E. Kinzie St. Chicago 11, Ill.

If you write maker identify as IEN - 14061

BRING OVERHEAD COSTS DOWN WITH

WEBER Aerostand

ADAPTABLE FOR HUNDREDS OF JOBS!

No matter what the industry, Weber Aerostand can serve it better...more efficiently...more economically and above all far more safely when it comes to raised platform jobs. The worker has complete safety while working on a platform from 3' to 24' in height. Both hands are free for the job...tools are within easy reach. Resulting in a better job at lower cost.

Weber Aerostands roll on and off the job quickly, collapse easily for storage. Truck locks assure a stationary stand while working. Guard rails and skid-proof surfaces on steps and platform guarantee sure footing. Many industries use Weber Aerostands. They are familiar objects in the Aircraft, Oil, Railroad and Building Industry.

AEROSTAND 10D—Platform height from 3' to 10'. (With Aerostand 4, gives maximum 14'.)

AEROSTAND 10E—Same as Model 10D—with addition of 16" pneumatic wheels for smoother, easier mobility.

AEROSTAND 20A—Provides elevated work platform from 13' to 20'. (With Aerostand 4, gives maximum 24'.)

AEROSTAND 4—Handiest utility work stand made. 4' high work platform. Combines with Models 10D, 10E and 20A to give increased working height.

FOLDER AVAILABLE—If you would like to read about the many interesting uses for Weber Aerostands ask for folder IEN 100.

FREE CONSULTATION SERVICE—Weber engineers can often suggest uses for Aerostand that have not been apparent to the management of an individual plant. They are experts at determining the type and number of Aerostands that will give you maximum efficiency for your specific requirements. Please write us regarding your particular plant problem.

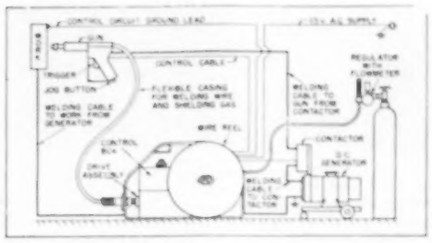
WEBER Aerostand holds the man up to the job IN SAFETY

WEBER AIRCRAFT CORPORATION (AEROSTAND DIVISION) 2820 Ontario Street • Burbank, California

If you write maker identify as IEN - 14063

WELDING . . Gas shielded arc gun for bronze, copper, nickel, steel

Source: AIR REDUCTION SALES CO. 1656 Lincoln Bldg., New York 17, N. Y.



Manual and automatic. Catalog ADC-717-B

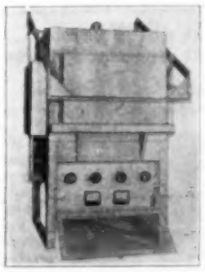
Number 20 is a new inert gas shielded metal arc welding gun in the company's Aircomatic line, previously described IEN-11776-49. This new gun is operated manually with current to 500 amp. and is suited for welding bronze, copper, nickel, steel, stainless steel. The gun and the welding cable supplying it are both water-cooled. The wire drive motor and the controls operate on 110-volt 60-cycle ac. Approximate dimensions of the carriage, on which the controls and wire supply reel are mounted, are 29 by 9 by 16 inches. Weight of the complete assembly is about 58 pounds. The gun is suited for wire ranging from 0.035 to 0.094 in. in diameter.

Shielding gas, argon or helium, is fed through the gun with the welding filler wire. The gas forms an envelope around the welding area to prevent oxidation of the weld metal or of the filler wire. Wire feed is maintained by a variable speed motor and drive rollers which draw the wire from its reel and propel it to the gun. The welding circuit is closed by operating a trigger on the gun to direct dc. through the filler wire from a standard welding generator.

If you write maker identify as IEN - 14064

HEAT TREATING . . Electric furnace for high speed steel, to 2,500 deg. F.

Source: COOLEY ELECTRIC MFG. CORP. 36-40 S. Shelby St., Indianapolis 7, Ind.



Ask for catalog

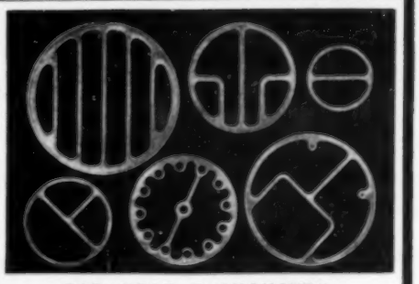
Globar elements are located at the top and the bottom of the work chamber in this new electric hardening furnace. They are energized through a multiple tap transformer equipped with tap changing switches and current meters on the furnace front. A pyrometer controls the action.

Insulation is with high temperature refractories. The door at the front constitutes essentially a moving front wall. It seals in closed position, is counterweighted so it can be opened without undue effort. Three chamber sizes measure 6¼ by 9 by 4 in., 12 by 18 by 8 in., and 12 by 24 by 8 inches. Temperature range is between 1,650 and 2,500 deg. F.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN - 14065

MELRATH GASKETS



FOR HEAT EXCHANGERS, CONDENSERS, CYLINDER HEADS

Style No. 20 (Special) Metal and asbestos double-jacketed gaskets for high temperatures and pressures. Made in any metal or shape to fit your needs.

"There's a Melrath Gasket for Every Purpose!"

MELRATH SUPPLY & GASKET CO., INC. 3501 MEMPHIS ST., PHILADELPHIA 34, PA.

If you write maker identify as IEN - 14066

THE RIGHT TOOL WHEN YOU WANT IT

This Continental Counterbore Set No. 1 contains a wide assortment of counterbores, countersinks and pilots arranged for quick selection. Its two holders feature Continental's Balanced Indestructible Drive, in which the tools are engaged or disengaged by a simple "twist of the wrist." One of Continental's three standard counterbore sets is sure to suit your needs. Order through your local Ex-Cell-O representative or write to Continental for complete information. Ask for Bulletin B47-37.

52-10

CTW

Continental Standard Counterbore Set No. 1 for counterboring, spot-facing, and countersinking.

CONTINENTAL TOOL WORKS

DIVISION OF EX-CELL-O CORPORATION • DETROIT 32, MICH.

If you write maker identify as IEN - 14067

WHEN YOU NEED NEW TIRES FOR YOUR LIFT TRUCKS

Call your truck distributor

● When you entrust your lift truck repairs to your truck distributor, you know the finished repair job will be complete and satisfactory. But, how about new tires? Your truck distributor can re-equip your trucks with tires, too! He knows what's best for your trucks . . . that's why he stocks **Monarch Mono-Cushions.** Place all your truck service under one roof . . . let your truck distributor service them from seat . . . to **Monarch Mono-Cushion** tires . . . the tires that keep your trucks steady.

THE MONARCH RUBBER COMPANY 201 LINCOLN PARK HARTVILLE, OHIO

If you write maker identify as IEN - 14069

STURTEVANT ROTARY FINE CRUSHERS

Crush or Granulate to Fine, Even Sizes without Excess Dust...

Cross section view illustrating the crushing action.

These rugged crushers speed output of fines, cut reduction costs. Desired fineness is quickly obtained by regulating hand wheel. "Open-door" accessibility permits fast, easy cleaning. They crush fine . . . crush fast and do not clog. Available in output capacities from 1 to 30 tons-per-hour. Write for catalog.

STURTEVANT MILL COMPANY
113 CLAYTON STREET, BOSTON 24, MASS.

If you write maker identify as IEN - 14070

THE FLORLINE MARKING MACHINE

Makes Safety & Parking Lines At Walking Speed!

Often pays for itself on the first job! 1 man alone can do the floor marking in 1 day that previously took an entire crew.

- Makes curved, straight, continuous or stop-and-go . . . 2, 3, or 4 inches wide with interchangeable cutting blades.
- Applies tile glue, paint, lacquer, wheelmarks . . . almost anything.
- No wear, compressor or mechanism.
- One man, one hand operation.
- Flexible, efficient, speedy.
- Operates on gravity feed.
- Easy to clean and store.

$97.50
F.O.B. Detroit
Fully Guaranteed

H. C. SWEET CO.
24396 W. 7 Mile Road — Detroit 19, Michigan

If you write maker identify as IEN - 14071

Dependable, accurate control for steam or air service!

KECKLEY pressure regulators

If you have to control steam or air pressures to unit heaters, kettles, air cylinders or other equipment, you can't do better than WITH KECKLEY PRECISION PRESSURE REGULATORS. No more worries about pressure variations or continual maintenance. Keckley regulators operate longer and more accurately because they're the product of—many years of technical experience in the designing and production of valve specialties.

Sizes from ¼" to 6"—Screwed or flanged—Initial pressures to 300 lbs. steam, 600 lbs. air reduced to a low of 1 psi. Various combinations for pressure and temperature control . . . Ask our representative, your industrial distributor or write us for further information.

SEND FOR COMPLETE CATALOG 51-8

O. C. KECKLEY COMPANY
400 West Madison Street • Chicago 6, Illinois

If you write maker identify as IEN - 14072

PLASTIC . . Impregnated fiber glass, rod, bar and tube stock, ¼ to 1 inch

Source: IMPERIAL FIBER GLASS INDUSTRIES INC.
77-81 Mill Road, Freeport, N. Y.

Technical data upon request

Light weight, strength, resistance to chemical attack characterize the company's line of reinforced fiber glass, now in production in its Freeport, L. I., plant. The material is available in rod, tube and bar stock in specified sections between ¼ and 1 in. and in required length. Natural color is pale green. Typical applications are in shafts for rheostats, electrical insulation, golf sticks, polo mallets, fishing rods, archery bows, ski poles, pipe carriers for chemical fluids, dowels, track guides for rollers, pump shafts, couplings.

If you write maker identify as IEN - 14073

CLEANING . . Degreasing solvents to replace carbon tetrachloride

Source: JOHN B. MOORE CORP.
P. O. Box 3-A, Nutley 10, N. J.

Technical data upon request

Orthosene, Per-Trolene and Frigisol are three new "safe" degreasing solvents for use on electrical, mechanical and metal parts and refrigeration equipment. Orthosene is a slow drying fluid with a high flash point, excellent degreasing ability. It does not leave any residual oily film. Per-Trolene is a rapid drying solvent with flash point at 140 deg. F. It is intended for electrical and mechanical maintenance shops.

Frigisol is rapid drying and is capable of displacing water. Its flash point is 235 deg. F. It is particularly suited to clean and dehydrate refrigeration lines and communicating equipment. Packaging is in 55-gal. drums and in tank car quantities.

If you write maker identify as IEN - 14074

PROTECTING . . Silicone ear insert permits hearing but stops loud noises

Source: SIGMA ENGINEERING CO.
1489-93 N. Vine St., Los Angeles 28, Calif.

Promotes comfort

Lee Sonic Ear-Valv is a new design of the company's ear insert with a silicone rubber body. It excludes harmful noises but does not interfere with normal hearing and keeps the ear channel open to receive air. The unit acts as a tiny filter. It is not an ear plug.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

If you write maker identify as IEN - 14075

THE EASY WAY TO TELL!

Changeable Letter Bulletin Board
The message you want—when you want it!

DAV-SON INDUSTRIAL BULLETIN BOARDS

Employee bulletins, safety messages, production records all get maximum attention when you use DAV-SON Bulletin Boards. There is a DAV-SON Bulletin Board for every purpose.

- Changeable Letter Boards
- Cork Back Pin-Up Boards
- Indoor and Outdoor Types
- Metal or Hardwood Frames
- With or Without Locking Glass Doors
- Illuminated and Non-Illuminated
- Special Safety Displays
- Single and Multiple Panels

Cork Back Boards. For letters, photos, posters, etc.

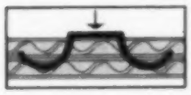
Write for complete information regarding your requirements.

A. C. DAVENPORT & SON, INC.
ESTABLISHED 1922
311 N. DESPLAINES ST., CHICAGO 6, ILL.
MANUFACTURERS OF BULLETIN BOARDS FOR EVERY USE

If you write maker identify as IEN - 14076

LOOK! A SELF-CLINCHER!

No blade to insert!
Staple spreads itself under or inside the work!



Bostitch T5 Tacker with outward clinch

Use it for stapling insulation around pipes and ducts . . . fastening shipping tags to corrugated containers . . . any job that calls for a blind clinch. By lightly pressing the handle you automatically drive a staple and turn its legs outward to clinch under or inside the work. Two models for light and medium staples. Call the Bostitch economy man in your area.

BOSTITCH AND FASTER fastens it better with wire

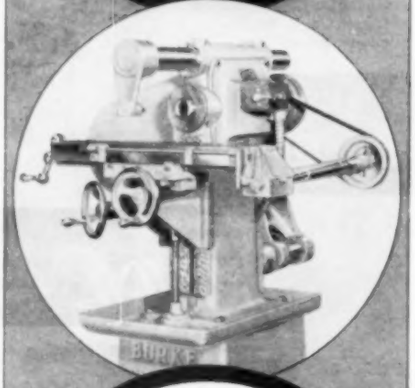
For more information about the Bostitch T5 Tacker with outward clinch, write BOSTITCH, 652 Mechanic St., Westerly, R. I.

If you write maker identify as IEN - 14077

SPEED PRODUCTION

OF SMALL PARTS AT SMALL COST
with dependable

BURKE BENCH MILLERS



Bear-for-work Burkes, in hand and power feed models are cutting time and cost on jobs formerly done on big millers in many modern production lines. Versatile Burkes are also on duty in thousands of tool, development, repair and school shops. Send for circulars describing models and attachments.

THE Burke MACHINE TOOL CO.
A Division of U. S.-BURKE MACHINE TOOL CO.
BROTHERTON ROAD 5, CINCINNATI 27, OHIO

If you write maker identify as IEN - 14079

MULTIPLE BENDING SAVES DOLLARS

Here is a Pedrick Production Bender producing five identical frames simultaneously. These savings can be yours too with a Pedrick bender. Multiple bending is adaptable to almost all bending operations, including pipe, tube, reinforcing bars or structural shapes.

Smaller and larger machines available.

Write for descriptive folder.

PEDRICK TOOL & MACHINE CO.
3640 N. Lawrence St., Dept. 7, Phila. 40, Pa., U.S.A.

If you write maker identify as IEN - 14080

New OHMITE POWR-RIB RESISTORS

Here is a new resistor which provides *dependable* operation for high-current applications.

Ohmite Powr-Rib edge-wound type resistors are wound with a heavy ribbon of resistance alloy on a ceramic core. This ribbon is rated at 375°C (707°F) temperature rise. All other metal parts are specially plated to prevent oxidation at high operating temperatures, and to insure good electrical contact. The ceramic core is divided into five sections to provide flexibility and resistance to shock. Available in full-rated capacities from 18.0 to 108 amperes; in resistance values from 0.100 to 2.85 ohms.

Write for BULLETIN No. 141

OHMITE MANUFACTURING CO.
4814 Flournoy St.
Chicago 44, Ill.

Be Right with

OHMITE®

RHEOSTATS • RESISTORS • TAP SWITCHES

If you write maker identify as IEN - 14082

WRENCH . . Open end ratchet, air operated for confined locations

Source: KELLER TOOL CO.
1948 Parks St., Grand Haven, Mich.

Air does the work

Two sizes for hexagon nuts, measuring ⅝ and ¾ in. across the flats, are available in this new air operated open end ratchet wrench. It slips over a nut that would normally be difficult to get at or impossible to move with a standard wrench. The head rotates for tightening or loosening when air pressure is applied by a valve.

The stop plate, built into the side plate of the assembly, moves forward when the operator applies thumb pressure to engage a pin in the socket. This stops the socket in open position for quick removal and for engagement of the next nut.

If you write maker identify as IEN - 14083

LAYOUT . . Equipment templates to scale on 12 by 18-in. film sheets

Source: REPRO-TEMPLETS INC.
Pennsylvania Ave. & River Road, Oakmont, Pa.

Please note our error

We call your attention to our error in IEN-3615-52 in which we described the company's Master Planning File of machine tool templates on film. We should have said that the templates are cut from the film sheets and are assembled on film grid sheets which the company also can supply on the same scale as the templates, ¼ in. to the foot.

If you write maker identify as IEN - 14084

HEATING . . Hot water supply tank, steam operated, rates 3.5 to 50 gpm.

Source: COE MFG. CO.
501 Bank St., Painesville, Ohio

Glass lined tank, built to ASME specifications for heated pressure vessels is insulated, protected by a metal cover and equipped with a steam heating coil and controls to make up the assembly of this new water heater. It supplies water for washroom use at a safe temperature to 120 deg. F. It also can be connected to supply secondary water at temperatures to 180 deg. F. simultaneously. Installation requires attachment to steam and water lines. Otherwise the unit is complete. It is available in seventeen sizes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14085

BARRETT "5-HUNDRED" ELEVATOR

An inexpensive, all-purpose portable elevator for loads up to 500 lbs., 5 ft. or 7 ft. lift; 24-inch square platform handles boxes, crates, drums, dies, etc. For loading dock, racking and storage operations; as supporting table, high level repair platform and many other time- and money-saving uses. Easily raised and lowered by hand, loads safely held at any height. Other low priced standard models offer capacities of 1000 and 2000 lbs. Write for Bulletin 5151.

BARRETT-CRAVENS COMPANY
4641 S. Western Blvd., Chicago 9, Ill.

Representatives in All Principal Cities.

Canadian Licensee:
S. A. Armstrong Ltd., Toronto

BARRETT
One man does more than 3 or 4...with a Barrett

If you write maker identify as IEN - 14086

Find out how you can get FLEXMOUNT Oscillating Conveyors "right off the shelf"

For those difficult conveying jobs, find out about the Link-Belt FLEXMOUNT Positive-Action Oscillating Conveyor. Positive Action assures uniform, gentle movement of fine, lumpy, stringy materials . . . materials in food and chemical process industries . . . sharp, oily chips and turnings . . . hot sintered materials, etc. All-metal, leakproof, compact, low in operating costs. Can be made dust-tight.

WRITE FOR BOOK 2470

LINK-BELT

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (South Africa), Sydney (Australia). Sales Offices, Factory Branch Stores and Distributors in Principal Cities.

If you write maker identify as IEN - 14087

SPERTI (FARADAY) SIGNALING EQUIPMENT . . . via Graybar

Dependable electrical equipment for every signaling need

Standard Faraday bells for direct connection to ½" surface conduit or for mounting over wall outlet box with hanger plate. Power-Pact mechanisms assure clear, distinct signals . . . are protected from dust and dampness by a cast frame and gasket.

Faraday buzzers for clear signaling in offices, stores, and banks. All wiring connections are made to the back of the exclusive Faraday adaptor plate, which is fastened directly to a standard 4" outlet box. Buzzer is then simply plugged into the adaptor plate — exposed terminals are eliminated.

Faraday horns for coding or general alarm purposes have loud, clean-cut tones. Horns are equipped with quick change, dead front adaptor plate to simplify installation and permit signal interchangeability.

Weatherproof Kodaire model is ideal for outdoor use. All-electric air blast provides maximum signaling power.

For complete information on Sperti Faraday signaling equipment, check with your local Graybar Representative. Graybar Electric Co., Inc. Executive offices: Graybar Building, New York 17, N. Y. 225-5212

Call Graybar *first* for . . .

Everything Electrical GraybaR

If you write maker identify as IEN - 14088

there's a way around this IRON CURTAIN

Don't put up with business blockades caused by overloaded or obsolete internal communications. AMPLICALL Electronic Intercommunication takes down the "Iron Curtains" in *your* business—provides *2-second speech contact* within and between departments—leaves switchboards clear for important outside calls—keeps personnel *on the job*—gets business done faster! Today, more than ever, your business needs AMPLICALL—the superior Intercommunication System.

ELECTRONIC **AMPLICALL** INTERCOMMUNICATION

See Your Phone Book

For your nearest AMPLICALL specialist, look under "Intercommunication" in your classified 'phone directory, or write direct.

Electronaering is our business

SOUND EQUIPMENT **Rauland** INTER-COMMUNICATION

RAULAND-BORG CORPORATION • 3523-M ADDISON ST., CHICAGO 18, ILL.

If you write maker identify as IEN - 14089

EVERY ENGINEER will want a copy of this BULLETIN

SEND FOR BULLETIN 110

● It's easy to get the right cylinder for even the most special jobs when you use Hannifin's big hand-book on HYDRAULIC CYLINDERS. 52 pages of helpful specification and engineering data, complete with diagrams and dimensions. The Hannifin line is complete! 12 standard bore diameters, 1" to 8" . . . any length stroke you specify . . . 11 standard mounting styles . . . standard, double end or heavy duty 12/13 piston rods . . . available with adjustable cushions . . . pressures to 1500 lbs. per sq. in. Send for Bulletin 110. Hannifin also builds custom cylinders in any quantity to special designs. *Bring us your cylinder problems!*

HANNIFIN
1107 S. Kilbourn Ave., Chicago 24, Ill.

If you write maker identify as IEN - 14090

FREE SANITARY SURVEY!

Let your Dolge Service Man make a complete sanitary survey of your premises with a view to helping achieve more effective, efficient, economical maintenance.

Send for Booklet No. 12

Dependable DOLGE
WESTPORT, CONNECTICUT

If you write maker identify as IEN - 14091

REDUCE FILTRATION TROUBLES!

Need a filter but worried about filtration costs, operation, or suitability for your purpose? Then get your Free Copy of the Titeflex® Filter Booklet right away.

Ask for a Titeflex Engineer to set you straight on costs and equipment for your special needs. No obligation. Mail coupon today.

FREE BOOKLET . . . FREE ADVICE

Businesses served by Titeflex Filters include . . .
Chemical • Distilling — Dry Cleaning
Electroplating — Paints & Lacquers
Soap • Cosmetics — Water
Pharmaceuticals — Food Processing
Wine • Beverages — Edible Oils
Machine Tool — Food Extracts

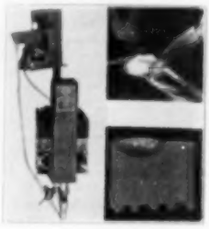
Titeflex
Let Our Family of Products Help Yours

MAIL COUPON TODAY
TITEFLEX, INC.
506 Frelinghuysen Ave., Newark 5, N. J.
☐ Please send me a copy of your Free Booklet about Titeflex Filters.
☐ We need the advice of a Titeflex Filtration Engineer . . . without obligation on our part.
NAME
TITLE
COMPANY
ADDRESS
CITY ZONE STATE

If you write maker identify as IEN - 14092

HARD FACING . . Inert arc machine combined with tungsten carbide feed

Source: AIR REDUCTION SALES CO.
1656 Lincoln Bldg., New York 17, N. Y.



Excellent for tools

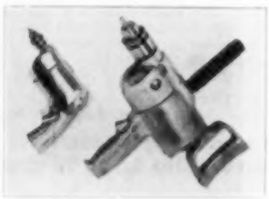
New combination of the company's automatic Heliweld inert gas shielded welding equipment and a feeder for granular tungsten carbide is now available to hard face metal parts. The Heliweld arc head with its non-consuming tungsten electrode melts the base metal and produces an elongated pool. The carbide particles are poured into this pool directly behind the arc with electrically controlled feed. Tests show that abrasion resistance of this deposit is considerably greater than was possible to obtain by previous arc methods.

Welding current is supplied by the company's standard 400 amp. dc. equipment. Helium gas is fed through a regulator to surround the arc. Welding speed is about 18 ipm., in application on a tool joint measuring 5¾ in. in diameter with the joint rotating at 1 rpm. The non-consuming electrode is ⅛ in. diameter tungsten. Resulting matrix hardness tests 48 to 51 on the Rockwell C scale.

If you write maker identify as IEN - 14093

DRILLING . . Portable electric tools, universal motor, ¼ and ½ in. chucks

Source: PORTER-CABLE MACHINE CO.
1712-16 N. Salina St., Syracuse 8, N. Y.



For intermittent duty

General Duty Model 107 with a ¼ in. chuck and a Special Duty Model 109 with a ⅜-in. chuck have been added to the company's line of portable electric tools. Both mount their spindles on ball bearings and are equipped with Jacobs gear type chucks. Assembly is in an aluminum housing. The universal motor operates on 110-volt input.

The small drill operates to within ¾ in. of a parallel surface. It weighs 3 lb. and 6 ounces. The large unit operates free at 450 rpm. It will drill within 1¼ in. of a parallel surface and weighs 9 pounds. Both are for intermittent duty.

If you write maker identify as IEN - 14094

Minnesota Rubber and Gasket Company has worked out a process by which it can mold any Dow Corning or General Electric silicone stock in the same molds that have been previously suitable only for rubber stocks. Shrinkage factor can be held within 1½ per cent after 24 hours at 480 deg. F. in heat treating. The work can be handled on a contract basis to your order for the silicone parts.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

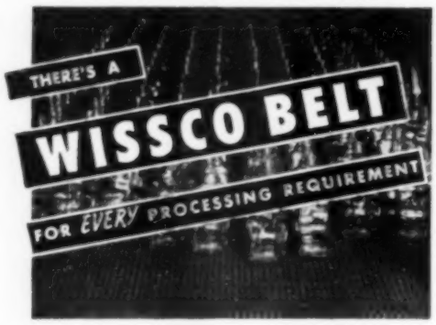
If you write maker identify as IEN - 14095

Knurled heads assure a firm finger grip for quick setting by hand . . . key type hexagon socket wrenches assure easy driving, even in awkward locations . . . precision threads assure greater thread bearing and resistance to stripping.

Send for this folder for complete catalog and purchasing information.

DANLY MACHINE SPECIALTIES, INC.
2100 South Laramie Avenue, Chicago 50, Illinois
PRECISION DIE SETS AND DIEMAKERS' SUPPLIES

If you write maker identify as IEN - 14096



Custom-engineered to meet your specific requirements, Wissco Metal Processing Belts are furnished in standard or special mesh constructions . . . in conventional and spiral weaves . . . and with rod reinforcements for high-temperature service. Supplied in correct metal or special alloy for resistance to heat, abrasion and chemical action.

For specific information write or phone our nearest sales office.

THE COLORADO FUEL & IRON CORPORATION – Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION – Oakland, California
WICKWIRE SPENCER STEEL DIVISION – Clinton, Massachusetts

WISSCO BELTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL & IRON CORPORATION
CF&I

If you write maker identify as IEN - 14097

ready to use FLINTZ

* (FLINTY HARDNESS)

HARD RESURFACER FOR CONCRETE

- **Trucks keep moving after the pull stops.**
- **The only preparation for placing Flintz is to clean the floor—there is no cutting.**

Several concerns have used 1000-2000 bbls. of our resurfacers. We are now doing a 350 bbl. job. We install or furnish materials.

Write today for FLINTZ booklet, "Keep 'Em Rolling" for full details, or address inquiries to:

"KEEP 'EM ROLLING"
DURA-TRED CO. FLINTZ DIV.
357 N. CENTRAL PARK BLVD. • CHICAGO 24, ILLINOIS

If you write maker identify as IEN - 14098

Special TO SPECIFICATIONS — IN ANY QUANTITY

COILS
TRANSFORMERS
PRECISION WIRE WOUND RESISTORS

We offer a complete Engineering and Manufacturing Service with emphasis on Special Applications. Small pilot runs, or full scale production executed economically and on schedule. Consult us for these products:—

COILS:
High Freq. Air Core
Multi-Layer Solenoids
Peaking
Synchro Windings
Television RF, IF, etc.

TRANSFORMERS:
Audio • Power
Elevator
High Voltage
Pulse Applications
Synchros, etc.

Experimental Samples promptly submitted, usually without charge. Write to:

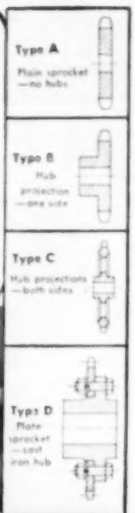
COMPONENTS MFG. DIV., Dept. IEN
TRANSVISION, INC.
NEW ROCHELLE, N. Y. NE 6-6000

If you write maker identify as IEN - 14099

"We'll cut costs here with SEWALL STOCK SPROCKETS"

• Why have sprockets tooled to order when you'll get quick service on standard pitch, roller chain sprockets right out of the Sewall catalog? These diagrams will help you decide if Sewall can help to cut your sprocket costs. *Send for your free catalog.* Service offices in Chicago and St. Paul.

By the makers of Sewall Custom-Built Gears



E. B. SEWALL MFG. CO.

686 GLENDALE ST. • ST. PAUL 4, MINNESOTA

If you write maker identify as IEN - 14100

WHY NOT HAVE THE BENEFITS OF CONTROLLED HUMIDIFICATION

with ARMSTRONG STEAM HUMIDIFIERS

YOU undoubtedly know well the ill effect of *dry air* in your plant during the winter heating season—whether it be static electricity; shrinkage, weight loss or deterioration of hygroscopic materials; production delays or difficulties. But, do you know how readily and *economically* these problems can be overcome with Armstrong Humidifiers? Here is some information to guide you:

1. **Principle**—introduction of dry steam directly into room.
2. **First Cost**—as low as $182.25 for a unit to humidify up to 40,000 cu. ft.
3. **Operating Cost**—from a few pennies to perhaps $1.00 per day per unit for steam and electricity.
4. **Installation Cost**—some simple pipe fitting and electrical work is required.
5. **Control**—automatic and accurate within 2% to 5% of desired point.

SIMPLE ECONOMICAL DEPENDABLE

SEND FOR BULLETIN 1774 giving complete data.

ARMSTRONG MACHINE WORKS

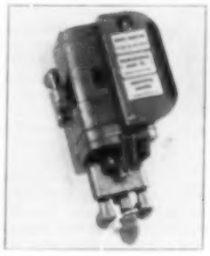
888 Maple Street, Three Rivers, Michigan

FACTORY REPRESENTATIVES IN 39 CITIES

If you write maker identify as IEN - 14102

CONTROL . . Pneumatic instrument for flow rate, pressure, temperature

Source: FISCHER & PORTER CO.
6890 Jacksonville Road, Hatboro, Pa.



20 pound supply air

Pneumatrol Type P-4 is a new controller available for single or dual instrument case mounting and for point of measurement installation. The latter is shown in the illustration. The instrument is a true motion balance unit and can be supplied for on-off, narrow or wide band proportional control with manual or automatic reset for plain or derivative action.

The narrow band proportional unit is adjustable from 1 to 25 per cent. The wide band controller ranges from 10 to 500 per cent. The new instrument and its available forms are described in Catalog C-50.

If you write maker identify as IEN - 14103

PROTECTING . . Dynel fabric shirts, trousers, coveralls for chemical work

Source: MINE SAFETY APPLIANCES CO.
21 Braddock Ave., Pittsburgh 8, Pa.

Neat appearance without pressing

Dynel fabric employed in manufacture of worker clothing known as ChemKlos, previously described IEN-35-52, is now available in a shade of gray. It has been developed to make stains and soil less noticeable and to assist in the laundering operation.

New additions to the line include a lightweight 6-oz. shirt and sizes from 38 to 48 in clothing for men over 6 ft. in height, in addition to the previously developed line of 13 standard sizes. All are listed in a new Bulletin 1300-1.

If you write maker identify as IEN - 14104

PUMP . . Vane type rotary for vacuum and air pressure services

Source: DEXTER FOLDER CO.
330 W. 42nd St., Room 819, New York 36, N. Y.

For oil free air

Carbon graphite vanes, mounted in the rotor of this new Dri-Air pump, operate without need for lubrication and are chemically inert so the pump is able to deliver clean oil free air. The balanced rotor is mounted on a shaft that rides in two double sealed grease packed ball bearings so no field lubrication is required. Three sizes in the line operate at delivery pressure of 7, 10 and 12 pounds. They are recommended to maintain 20 in. of vacuum in intermittent service or 15 in. in steady duty. The housing and end covers are machined to tolerances sufficiently close so no gaskets are required.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14105

Want to know what it costs

TO KEEP YOUR GRANULARS FROM *Sticking* IN BINS?

We're referring to the use of a Cleveland Air Vibrator as a low-cost, quick action way to free up bins, hoppers, chutes, screens, storage tanks, etc., containing granulars inclined to arch, bridge or stick.

An average installation on a standard steel bin of 10-tons capacity in the chemical processing industry is only $101.55!

An average installation of a Cleveland Air Vibrator on a standard steel bin of 1500# capacity in the food processing industry is only $41.40.

On a 3000# bin in the foundry industry, it costs only $52.05.

On a mine car handling ore, a Cleveland Air Vibrator costs only $153.05.

On a way batch hopper of 2 cubic-yard capacity, it costs only $41.40 to keep concrete materials moving.

These are merely typical installations of Cleveland vibrators. We make a type and size to meet any requirement. Our vibrators are moving everything from walnuts to ice cubes, concrete to bottle caps.

Standard metallic impact and air-cushioned quiet types. What's Your Problem? Catalog No. 105 on request.

BIN Stuck Lately?

Move, Settle or Package Quickly with *Cleveland Air Vibrators*

THE CLEVELAND VIBRATOR CO.

2736 Clinton Avenue • Cleveland 13, Ohio

If you write maker identify as IEN - 14106

Arrow shows 75 horsepower Century Slip Ring motor installed on a large bending roll

Century Motors are designed for stamina, engineered for long, dependable service, carefully tested and balanced for precision performance.

What's more, you can select a size and type of Century Motor that's exactly right for your particular job. They're built in sizes from ⅛ to 400 h.p. — to meet all kinds of atmospheric or plant operating conditions.

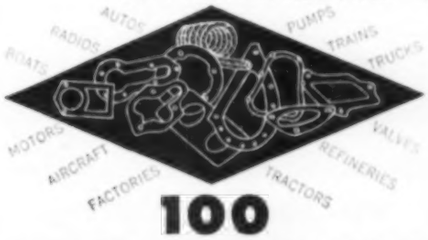
Why settle for less than a Century, when you specify your next electric motor?

CENTURY ELECTRIC COMPANY

1806 PINE STREET • ST. LOUIS 3, MO.

CE-754R Offices and Stock Points in Principal Cities

If you write maker identify as IEN - 14107



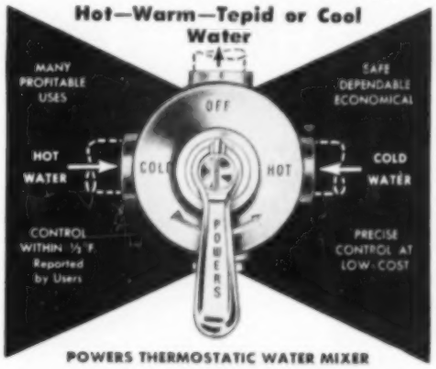
100 OR 100,000,000 GASKETS • PACKINGS • DIE-CUTS for EVERY industry

Whatever your needs—100 gaskets or 100,000,000—standard materials or special—you can rely on Fel-Pro to furnish exactly the right item for your particular service. The entire facilities of three modern plants and over 30 years of experience in supplying gaskets, packings and die-cuts to industry are at your disposal. For FREE Portfolio, containing samples of over 50 materials for solving special problems, write TODAY to:

FELT PRODUCTS MFG. CO., 1523 Carroll Avenue, Chicago 7, Ill.
Warehouses in: Atlanta, Boston, Dallas, New York, Los Angeles, Oakland, Portland

FEL-PRO Unique Newest Materials ENGINEERED Specially designed for each application **gaskets**

If you write maker identify as IEN - 14108



POWERS THERMOSTATIC WATER MIXER

Can It Solve a Problem for You?

Set a Powers Mixer for any temperature desired and forget it. Temperature remains constant regardless of fluctuations of *pressure* or *temperature* in water supply lines. Failure of cold water supply instantly shuts off delivery.

Is widely used for X-Ray and color film developing, hydrotherapeutic baths, chocolate enrobers and other processes requiring exact control. It is the safest regulator made for shower baths.

CAPACITY—10 gals. per min. at 45 psi. Dial diam. 5¼". Pipe connections ½". Temp. Ranges: 65° to 115°F.; 60° to 125°F.; 75° to 175°F. *Write for Bulletin 358-H.*

LARGER CAPACITIES up to 1000 gpm. available in other types of controls. *Write for Cat. 3035.* (8a)

THE POWERS REGULATOR COMPANY

3437 OAKTON STREET, SKOKIE, ILL.

Established 1891 • Offices Over 50 Cities • See Your Phone Book

If you write make identify as IEN - 14109

A Better Strainer! —by DAVIS

—with BOLTED CAP

Bolted cap construction is used in sizes from 1½" to 12".

If you think all strainers are alike, ASK THE MAN WHO HAS TO GET INTO THEM! Davis builds strainers with bolted caps, (instead of threaded caps) because numerous engineers have asked for them. It's easier to remove bolts than to try to unscrew a large thread cap after a strainer has been in use. Also makes possible locating blow-off at lowest point; no sediment pocket. Don't confuse Davis precision-made strainers with ordinary pipe fittings. Available in wide choice of types for steam, air, gas, or fluids. Semi-steel, bronze, or steel bodies; screw or flanged. Pressures to 1500 p.s.i. Brass, stainless or monel strainer screen. Ask for bulletin 100-A.

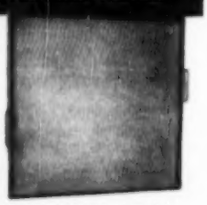
Davis
DAVIS REGULATOR COMPANY

2581 South Washtenaw • Chicago 8, Illinois

If you write make identify as IEN - 14110

YOURS FREE!

Farr Company Offers a Competent Staff of Field Engineers Plus Laboratory Services to Assist You with Your Air Filtration Problems



Selection of the proper air filters to meet your exact needs is most important. For this reason, Farr Company maintains competent field and laboratory engineers who are well-qualified to determine the best type of filter needed to solve your particular problem. This free service can be invaluable to you in guaranteeing complete satisfaction with your air handling system.

LATEST AIR FILTER TESTING METHODS ASSURE YOU of PEAK PERFORMANCE

After years of research, Farr engineers have developed a radically improved method of measuring filter efficiencies that takes the guess work out of air filtration. Now, for the first time, filter performance on your job can be predetermined. This eliminates costly mistakes and needless expense. This is just one of the many money-saving services available to you at no cost. Write for full information on FAR-AIR* products.

PANEL FILTERS — FAR-AIR panel filters are available in many types and sizes. Each design has been engineered for peak performance and substantial economy over ordinary types.

SELF WASHING FILTERS — These completely automatic units are available to meet any CFM requirement. They quickly pay for themselves in greater efficiency and drastically lowered maintenance costs.

ENGINE FILTERS — Many types and sizes of engine and compressor filters are available or can be engineered to your requirements.

ROTARY COOLERS — These efficient, economical units have proven highly successful under hot, low humidity climatic conditions. They are available for commercial and home use.

*Trade Mark Reg.

FAR-AIR FILTERS — Better by Farr

Whatever your air filtering problem is, it will pay you to mail the coupon today for expert engineering assistance. Remember, this is a FREE SERVICE!

FARR COMPANY
Manufacturing Engineers
CHICAGO • LOS ANGELES • NEW YORK
Mf'd under license by Control Equipment Co., Ltd., Montreal

FARR COMPANY, P. O. Box 10187, Airport Station, Los Angeles 45, California

Gentlemen: Send me complete information on FAR-AIR products. I would ☐ would not ☐ require engineering assistance.

Name .....
Company .....
Address .....

If you write make identify as IEN - 14112

CONTROL . . Photoelectric equipment to actuate dc. controls and counters

Source: AUTOTRON CO.
Box 722-C, Danville, Ill.

No. ac. relay needed

The plate circuit in this new Shadowswitch photoelectric control has a rated output at 110-volt dc., sufficient for direct operation of control and counting apparatus. As a result it is possible to eliminate the relay, previously employed by the company, to control an outside ac. circuit for the controlled equipment. The dc. operation makes it possible to speed up counters and also to give them a longer service life than was possible with ac.

Assembly includes an amplifier that is pre-adjusted for maximum sensitivity so field adjustments can be made with the light source for given applications. This unit can be set for beam interruption by objects as small as $\frac{1}{16}$ in. in diameter. Sharper focus is obtainable through an additional lens that can be specified. The photoamplifier has positive lock tube shields and rubber base tube sockets. It and the photoelectric tube are assembled in a cast aluminum housing. The light source is in a brass tube with an aluminum mounting.

If you write make identify as IEN - 14113

THERMOSTAT . . Cylindrical design makes or breaks 1 amp. on 48 volt ac.

Source: FENWAL INC.
216-20 Pleasant St., Ashland, Mass.

About actual size

New design of the company's midget Thermoswitch, previously described IEN 6780-48, is assembled in a housing measuring ¼ in. in diameter. It is designed for application in a solid, a liquid or a gas where space is limited. Set point range is minus 50 to plus 450 deg. F. with sensitivity to 0.1 deg. F.

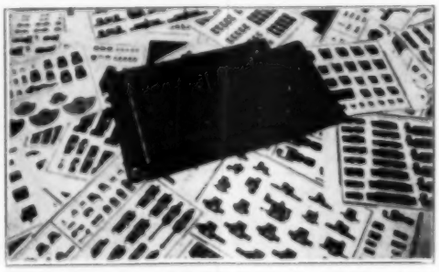
The contacts close on temperature rise in the unit illustrated but it can be supplied for operation in the opposite direction. Expansion and contraction in the housing is the actuating means in both cases.

identify as IEN - 14114

New application for stainless-steel wear resistant thread inserts, manufactured by Heli-Coil Corporation, is in the soft copper parts of induction heating equipment such as electrodes, bus bars, induction blocks. Fastenings can be threaded in and out many times in making new setups of the equipment without any danger of pulling out.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write make identify as IEN - 14115



Scale is ¼ inch to the foot

NOW READY FOR DELIVERY!

5,000 templets of machine tools and equipment on film for layout planning

The Repro-Templet Master Planning File will be shipped immediately on receipt of purchase order. We will ship it for examination upon request of your purchasing department.

$650 express prepaid

REPRO-TEMPLETS INC.
Oakmont, Allegheny County, Penna.

If you write make identify as IEN - 14116

2500 P.S.I. THREE SERIES OF **30" VAC.**

MERCOID DA PRESSURE CONTROLS

PROVIDE THE SENSITIVITY YOUR APPLICATION REQUIRES

- FULLY ADJUSTABLE AS TO RANGE AND SENSITIVITY
- BOURDON TUBE OPERATED
- VISIBLE CALIBRATED DIAL
- MERCOID SEALED MERCURY CONTACT

There is a Mercoid DA Pressure Control for your particular application in pressures varying from 30" vacuum to 2,500 p.s.i. (available in many different circuit arrangements).

Apart from bourdon tube operated pressure controls, Mercoid offers a line of bellows and diaphragm actuated controls.

Explosion-proof and weather-proof cases are adaptable to practically all series.

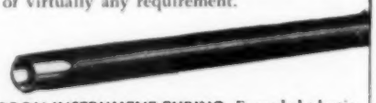
If you have an automatic control problem involving the control of pressure, temperature, liquid level or mechanical movement, write for Catalog No. 700A.

THE MERCOID CORPORATION, 4201 BELMONT AVE., CHICAGO, ILL
NEW YORK: 205 E. 42nd ST. • PHILADELPHIA: 3137 N. BROAD ST

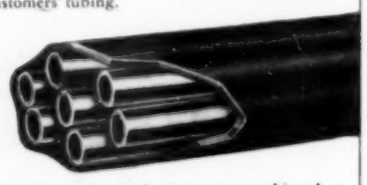
If you write make identify as IEN - 14117

Eliminate... FREQUENT REPLACEMENT COSTS *With* CORROSION-PROOF Dekoron Instrument Tubing

• **DEKORON**® process of extruding a thick plastic sheath over instrument tubing makes the tubing corrosion proof . . . ends your corrosion problems *once and for all*. This means you eliminate the high cost of renewing expensive copper or alloy tubing . . . eliminate replacement costs . . . eliminate maintenance . . . conserve critical materials. Dekoron corrosion-proof instrument tubing is available in three different forms to take care of virtually any requirement.



DEKORON INSTRUMENT TUBING. Extruded plastic coating over metal tube makes it impervious to moisture, corrosion, salt air, oils, acids, and alkalies. Available in straight lengths up to 20 ft., coils up to 1000 ft., or as coating service for customers' tubing.



IMPERVAPAK METL-COR. Instrument tubing harness composed of 4, 7, or 10 copper or aluminum tubes over which is extruded thick coating of high-molecular-weight polyethylene. Available in lengths up to 100 ft.

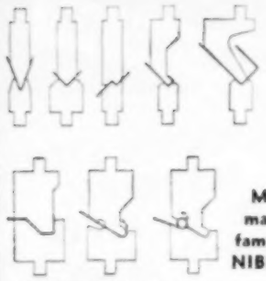
IMPERVAPAK POLY-COR. Composed of 4, 7, 10, 14, or 19 flexible polyethylene tubes over which is extruded $\frac{1}{16}$ inch sheath of vinyl plastic. Tubes will carry all standard line pressures. Individual tubes are color coded for easy line identification; lengths to 500 ft. A-507

Dekoron® tubing

SAMUEL MOORE & COMPANY
Dekoron Tubing Division
MANTUA • OHIO

If you write maker identify as IEN - 14119

BRAKE DIES



Made from FORGED CHISEL STEEL BILLETS

Made by the makers of the famous SEMCO NIBBLER PRESS

- MANY STILL IN USE EVEN AFTER 10, 20 AND EVEN 30 YEARS.
- THEY COST MORE BUT THEY LAST FOR YEARS.

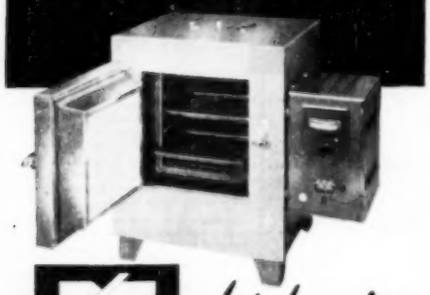
Write for estimates on your work and ask for latest literature.

SEMCO

SERVICE MACHINE COMPANY
INCORPORATED
200 MILLER STREET ELIZABETH, N. J.

If you write maker identify as IEN - 14120

precise control of *high temperature*



BLUE M LINE *hi-heat*

ELECTRIC OVENS

Makes Teflon test procedures easy! For laboratory or pilot plant . . . drying, baking, tempering, etc.

Power Selector Switch . . . built in to provide selection of wattage input with relation to working temperatures. Reduces operating costs by proportioning current to temperature throughout the entire range.

Electronic Pyrometer . . . Series C equipped with indicating and controlling pyrometer and iron-constantan thermocouple. Series A and B have indicating and controlling hydraulic thermostat. U.L. approved. Power contactors are of solenoid type—inherently reliable.

Construction and Insulation. Double wall, heavy stainless steel interior, exterior and door. Dual Modella insulation with 5" to 7½" thick sections on all six sides. Stainless steel bellows seals mean lifetime door closure. Two stainless steel shelves—adjustable and removable. Modella heater bank widespread for uniform temperature. All wiring complete . . . meets N.E.C. standards.

12 MODELS TO CHOOSE FROM

3 temperature ranges in 4 sizes each

Series A—Temperatures from 150°F to 800°F
Series B—Temperatures from 150°F to 1000°F
Series C—Temperatures from 150°F to 1200°F

Inside dimensions: 12" x 12" x 12", 16" x 16" x 14", 19" x 15" x 18", 24" x 30" x 20"

All models available with Forced Draft Turbo-blower and ball bearing motor

See your local dealer or write for Bulletin

BLUE M LINE

BLUE M ELECTRIC COMPANY
306-308 West 69th Street, Chicago, Illinois

If you write maker identify as IEN - 14122

LATHE TOOL . . Holder and blade for cut-off duty in a screw machine

Source: NEW BRITAIN MACHINE CO.
138-42 Chestnut, New Britain, Conn.

Clean action free from chatter

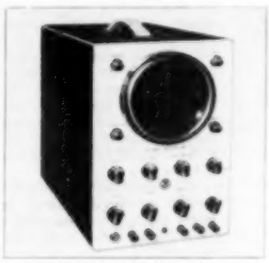
Tool steel blade, semi-circular in form, is marked off with radial lines to assist in grinding. It applies beneath a holder plate on a steel shank in this new tool for cut-off duty in screw machines rating to 1⅜ in. capacity. Enough of the blade is exposed beyond the end of the plate to clear the work as the cut is made. The blade can be removed from the holder and replaced accurately without further adjustment for center and size. The unit shown applies in an adapter the company can supply to replace present straight cut-off tools.

The top or periphery is hollow ground to collapse the chip and minimize heat generation. Side clearances are ground when the blade is made. Front clearance angle is ground initially prior to shipment and from there on by the user with assistance of the marked lines. Top rake is constant. Control of the chip during the cut is maintained by grinding the back-up plate and not the tool edge.

If you write maker identify as IEN - 14123

TESTING . . Oscilloscope for laboratory and inspection uses

Source: RADIO CORP. OF AMERICA
413-17 S. 5th St., Harrison, N. J.



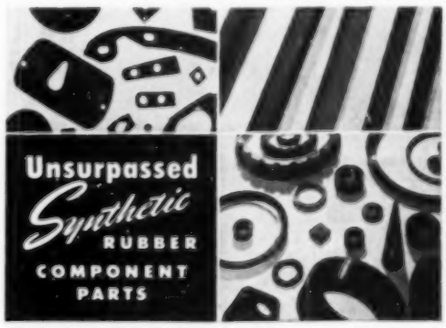
About $160

Type WO-88A is a new 5-in. oscilloscope characterized by excellent high and low frequency response. It is suited for use in the laboratory, in the production line and in television service shops. The 50-kc square wave response provides accurate reproduction of TV horizontal synchronizing and blanking pulses with straight vertical lines, sharp corners and true horizontal retrace base lines for comparison.

The instrument is designed for continuous duty. It operates on 110-volt 60-cycle ac. It measures 9 by 16½ by 13½ in. and weighs 25 pounds. Equipment includes a 10 megohm probe with input capacitance under 10 uuf. Deflection sensitivity is 25 rms. millivolts or better per inch. Frequency response is flat from dc. to 500 kc. within minus 3 db. and within minus 10 db. at 1 mc. Sweep circuit frequency ranges from 15 cps. to 30 kc. in four ranges.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN - 14124



Users of Acadia Synthetic Rubber component parts in hundreds of industries have found them unsurpassed. No matter what function synthetic rubber must perform, depend on Acadia parts. They best meet exacting specifications and operating conditions such as moisture, oil, heat, wear and age resistance. Molded, extruded, die-cut to close limits—compounded to meet specific conditions. Acadia engineers will gladly cooperate.

- Seals
- Gaskets
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- Channel
- Strip
- O-Rings
- Sheet
- Tubing
- Roll Goods
- Cut Parts
- Lathe Cut Washers

Sheet and Roll Felt Manufactured for Special Purposes and To Meet All S.A.E. and Military Specifications

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Processors of Synthetic Rubber and Plastics • Sheets • Extrusions • Molded Parts
DIVISION WESTERN FELT WORKS
4035-4117 OGDEN AVENUE • CHICAGO 23, ILLINOIS

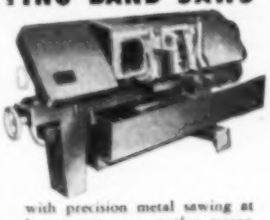
If you write maker identify as IEN - 14125

You can CUT THIN WALL SECTIONS BETTER

with Kalamazoo

METAL CUTTING BAND SAWS

Why? Because Kalamazoo's hydraulic frame control is coordinated with the feed control to give just the right blade pressure for smoothest, most accurate cutting of tubing and thin wall sections. In addition, the saw frame cannot drop accidentally and damage material or saw blade. Yes . . . here's *another* reason why Kalamazoo is synonomous with precision metal sawing at lowest cost . . . *another* reason why it will pay you to specify Kalamazoo Metal Cutting Band Saws. Three models, all available with coolant system and casters.



MACHINE TOOL DIVISION

Kalamazoo TANK and SILO CO.
1211 HARRISON ST., KALAMAZOO, MICH.

If you write maker identify as IEN - 14126

UNIVERSAL DRILL BUSHINGS in a complete variety of sizes and shapes

Universal Drill Bushings are produced in a complete range of standard sizes and lengths. Prompt attention is also given to orders for special dimensions. Universal Drill Bushings are precision machined with super finish bores to reduce wear, and a blended radius to keep tool hang-up and breakage to a minimum. 100% concentricity and hardness tests insure absolute accuracy, uniform high quality, and long life. Write today for complete information.

The modern home of finer production tools 167-A

UNIVERSAL ENGINEERING COMPANY
FRANKENMUTH 6, MICHIGAN

If you write maker identify as IEN - 14127

SPRAY NOZZLES

. . . FOR EVERY NEED!

For lower cost and more efficient spraying try Spraying Systems Spray Nozzles. Complete type and size selection for every need. Write for Catalogs.

CLIP AND MAIL

SPRAYING SYSTEMS CO.
3208 Randolph Street • Bellwood, Illinois

☐ Send me Catalog No. 22 ☐ Send me Catalog No. 23

Name
Company Name
Address
City State

If you write maker identify as IEN - 14128

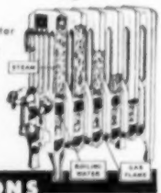
NO NEED TO WORK IN AN OVERCOAT

WITH A CLOW GASTEAM RADIATOR IN YOUR OFFICE

Steam Heat...where you want it... when you want it.

Hard to heat offices within a cold, drafty plant, warehouse or plant out-building become warm and comfortable with an individual Clow Gas Steam Radiator. Economical, because they make their own steam heat with gas. No hot water pipes, boiler or furnace room to depend upon. Available in 35 sizes, vented and unvented, to meet every heating need.

SEND FOR COMPLETE INFORMATION, INCLUDING OPERATING PRINCIPLES, INSTALLATION DATA, TYPICAL INSTALLATIONS AND PRICES.



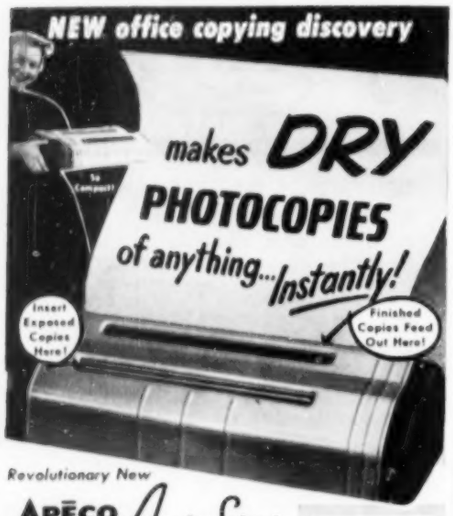
Available for City, Butane or Propane Gas

JAMES B. CLOW & SONS
201-299 N. Talman Ave., Chicago 80, Ill.

If you write maker identify as IEN - 14129

NEW office copying discovery

makes DRY PHOTOCOPIES of anything...Instantly!



Revolutionary New

APECO Auto-Stat

New, low-cost machine makes photo-exact copies direct from original letters, forms, bids, contracts, invoices, reports, blueprints.

Here is the first major advancement in office copying in the last 15 years. Can save you up to 80% on your copying jobs! Eliminate costly retyping, hand copying, checking or sending outside for expensive copying service. The Auto-Stat is the first low-cost machine that makes error-proof, legally-accepted, black-and-white photo like copies—WITHOUT SLOW, MESSY DEVELOPING, FIXING, WASHING OR DRYING. It's fast—only 2 simple steps instead of 12 required by old methods. Makes prints instantly from any originals up to 11 x 17 inches—whether printed on one or two sides. Requires no dark room—and any inexperienced clerk can operate it!

So low cost! So compact!

Fits on the corner of a desk or table and is priced within the budget of even the smallest firm. It's portable—just plug in any outlet—and the Auto-Stat is ready for instant operation.

So Easy!

COPIES PEEL APART!

Copies feed out automatically . . . then you just peel copies apart. That's all there is to it. All Electric! Fully automatic!

No developing
No washing
No fixing
No drying
No trays
No dark room

HAVE YOU READ THIS NEW BOOK? IT'S FREE!

Developed and Manufactured in the U. S. A. by AMERICAN PHOTOCOPY EQUIPMENT COMPANY

Here is a really informative, worthwhile, factual report on an important new copying development. New 12-page booklet pictures and tells complete Auto-Stat story—shows how you can use this revolutionary new photo-copy method.

MAIL TODAY!

American Photocopy Equipment Co. Dept. IEN-122
2849 North Clark St., Chicago 14, Ill.

Please Rush me—without obligation—FREE copy of your new book on Auto-Stat—with full details on this new photocopy method.

Name
Firm
Address
City Zone State

If you write maker identify as IEN - 14131

SOLDERING . . Plated copper tips, tinned ready for use in electric iron

Source: ZOKAL SOLDERING TIP SALES
5647-51 Eastwood Ave., Chicago 30, Ill.

Ask for Tip Bulletin

Sizes range from ¼ to 1¼ in. in diameter in the company's line of slotted-shank plated copper tips which it has sold in the Chicago area for some time. The tips are now offered on a national basis for all makes of electric soldering irons. The line also includes tips for electric ovens and Bunsen burner use.

The copper is plated and a slot is cut in the shank so the tip will not freeze in a soldering iron and need not be removed, providing the tip socket was clean initially, until a new tip is required. The tip is cleaned in service by using a cloth or soldering flux, oil or a mild acid solution. The company warns against filing or using steel wool or salammoniac. When retinning is required the tip should be scraped lightly, then dipped in flux and fresh solder flowed on the working surface.

If you write maker identify as IEN - 14132

GENERATOR . . Pulse output unit provides ignition for natural gas engine

Source: AMERICAN BOSCH CORP.
3662-66 Main St., Springfield 7, Mass.

For steady duty

Type MGC is a new pulse generator designed to replace the magneto and distributor in supplying ignition to a natural gas engine. It operates as a conventional magneto at cranking speeds. Then when the engine comes up to speed, the breaker lift plates are retracted by a control plate so the breakers are held in inoperative position for normal running.

Accurately timed low-tension electrical pulses are stepped up to required spark potential by either single or double ignition transformers mounted on each cylinder near the spark plugs. These transformers are new Type CLQ single power or Type CLP two-spark types. They are sealed, oil filled and have closed cores. The new unit measures about 11 in. in diameter and stands a little over 12 in. in height.

Identify as IEN - 14133

National Sawdust Company knows how to manufacture ground glass from waste bottles. It can grade the glass to given mesh sizes. It can supply various colors. It is wondering who might purchase the glass in quantities. Perhaps here's an idea for you, a new material you can employ.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14134

Relays By GUARDIAN

Yuletide joys of '52 will include many Xmas electrical gifts. Guardian Relays are still available in quantity for improved control of peacetime products. The Guardian Series 335 D.C. Relay is a typical unit. It has been furnished to both MIL-R-5757 and MIL-R-6106 in open and sealed versions and is manufactured under MIL-Q-5923A standards.

Series 335 D.C. Relay

Generous coil winding area permits single windings up to 15,000 ohms. Power: Normal 2½ watts. Bakelite insulated tested at 900 V. 60 Cyc. Built-in delay with copper head for delayed attract up to .06 second and copper heel for delayed release up to 0.1 second. Contacts ⅛" dia. silver, 12 amps at 24 V., D.C. Maximum combination up to 4 POT (with 12 amp contacts). Open type mounting, metal cover, or hermetically sealed with leads or screw terminals. Special brackets to order.

GUARDIAN ELECTRIC
1620-P W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

If you write maker identify as IEN - 14135

Star has 'em WHEN YOU WANT 'EM!

STAINLESS STEEL FASTENINGS OF ALL TYPES RIGHT OFF THE SHELF

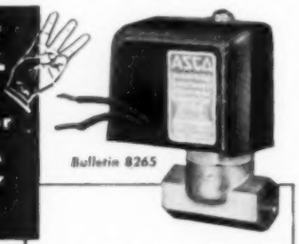
In-Stock-Service on small or large quantities • Cap Screws • Machine Screws • Sheet Metal and Wood Screws • Set Screws • Nuts, Washers, Etc. Class 3 AN Drilled Fillister Heads. Fast service on special screw machine products.

WRITE, WIRE OR PHONE TODAY
New Catalog just off the press.

Star STAINLESS SCREW CO.
ARmory 4-1240
212 Union Avenue • Paterson 2, N. J.

If you write maker identify as IEN - 14136

3 Sturdy SMALL Shut-off Valves for EXTRA HEAVY Duty



Bulletin 8265

Bulletin 8265 . .	for air, water, light oil, refrigerants and other liquids and gases up to 250 psi; for steam up to 175 psi; Factory Mutual and Underwriters' approved; ⅜" pipe size; 1/8" to ¼" port size.
Bulletin 8268 . . .	Similar but designed to handle a greater variety of materials up to 475 psi; heavy fuel oil up to 200 psi; ⅜" and ½" pipe size; 1/8" to ⅜" port size.
Bulletin 8271 . .	for steam and other non-corrosive liquids and gases at high temperatures (212° F. to 450° F.); ⅜" and ½" pipe size; 3/16" to ⅜" port size.

These ASCO Valves are packless, thus eliminating stuffing box maintenance. Modified types of this series include valves that "open" rather than close on de-energizing . . . adjustable main flow and by-pass flow valves . . . and explosion-proof valves. All are described in detail in our catalog section 6-V. Write for your copy.

Automatic Switch Co.
383 Lakeside Avenue Orange, New Jersey

When in need of Automatic Transfer Switches, Remote Control Switches, Contactors, Relays, and Specialized Electromagnetic Controls, come to us. V-50-8

If you write maker identify as IEN - 14137

NEW! TOP-CLAMP KENNAMATICS give Top Performance

1 SIMPLIFIED DESIGN—one rugged clamp and one sturdy screw for all standard tool styles and sizes.

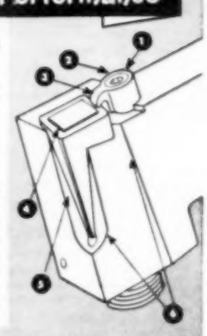
2 EASY TO GET AT—double end socket type screw permits release of clamp from either top or bottom.

3 EASIER TO INDEX—simply loosen clamping screw and clamp is up and away from insert.

4 CHIP BREAKER—most types can be used on insert without interference with clamp.

5 OPEN FRONT—provides added clearance and eliminates shank abrasion from "chip wash".

6 STRONGER—design provides greater rigidity. Insert is solidly backed up in direction of cutting force.



PLUS Extended tool life, simplified tool-setting, less grinding expense...Available in all "industry standards."

KENNAMETAL Inc. LATROBE, PA., U. S. A.

If you write maker identify as IEN - 14138

COMPRESSED AIR AND GAS COME OUT OF THE LOGAN

ARIDIFIER

Scrubbed CLEAN AND DRY

INSTALL ARIDIFIERS ON LINES SERVING

- Point Spray Guns
- Air Tools
- Air Hoists
- Foundry Jogging Machines
- Sand Blasting Tools
- Sand Blasting Rooms
- Metal Spray Guns . . . or Wherever the line must deliver clean, dry air or gas

On any air or gas line 92% of the dirt, oil, scale and water that enter the Aridifier is trapped and removed from circulation. The Aridifier's patented centrifugal-baffle action scrubs air and gas clean and dry . . . protects equipment, prevents freezing, fouling, corrosion and caking, produces best results with spray gun and air tool operations, etc. Easy to install. Self cleaning. Maintains itself. 10 models available. Capacity 7 CFM to 17,000 CFM.

Learn HOW the Aridifier scrubs with a patented centrifugal-baffle action.

Write for This Catalog Now!

Logan ENGINEERING CO.
4902 W. Lawrence Ave., Chicago 30, Ill.

If you write maker identify as IEN - 14139

For Lubricating Devices Call On

GITS

First!

GITS Bros. covers the *entire range* of lubricating devices: Oil Hole Covers, Oil Cups, Grease Cups, Bottle Oilers, Gauges. Gravity-Feed, Wick-Feed, Constant Level, Vibrating Rod styles. Threaded or Drive-type. Elbow or Straight.

GITS Bros. offers the most complete selection of standard styles.

GITS consistent quality in design, materials and machining has made Gits Lubricating Devices the standard for industry for more than 40 years.

GITS Lubricating Devices are far-famed for solving tough oiling problems at low cost.

GITS Bros. Engineering Staff—true specialists in lubrication engineering—is at your disposal.

Write today for free illustrated Price Guide Catalog. Use it as your handy reference for lubricating devices.

GITS BROS. MFG. CO.

1854 S. Kilbourn Ave., Chicago 23, Ill.

If you write maker identify as IEN - 14141

TRUCK . . Two wheel hand unit with foot operated hydraulic load lift

Source: ALLIED MFG. & SALES CO.
203 N. Wells St., Dept. 9, Chicago 6, Ill.

Good for Trucks

Model 1054 is new design in the company's Appliance Caddy, previously described IEN 5097-51. It will handle a 500 lb. load and elevate it to 54 in. above ground level by operating a foot lever connecting to a pump and hydraulic cylinder. The assembly includes a web safety sling. Pumping action is adjustable so the platform can be lifted quickly when it is empty or slowly to safely handle a capacity load.

If you write maker identify as IEN - 14142

ADHESIVE . . Water emulsion type to make waterproof paper closures

Source: PAISLEY PRODUCTS INC.
1772 Canalport Ave., Chicago 16, Ill.

5 gal. pails
55 gal. drums

No. 3020 and **No. 4391-F** designate two new water emulsion adhesives for application to seams in manufacture and in final closure of waterproof paper bags, wraps and case liners. Both adhesives meet the requirements of the new Military Specification MIL-A-140A. They differ essentially from each other only in color. No. 3020 is gray, No. 4391-F is a darker shade. Both adhesives can be employed in domestic and export packaging of non-military goods as well as for the Armed Forces. Application is by machine or by hand brushing.

Characteristics include good resistance to mildew attack, flexibility at zero deg. F., resistance to water penetration over an 8-hr. test period. The adhesive provides a strong bond for waterproof barrier materials. It can be applied and then "left open" for considerable periods before it must be joined to complete a seam. Adhered seams will not shift, flow or separate after 24 hr. at 140 deg. F.

If you write maker identify as IEN - 14143

TIMING . . Electric clock to record payroll and job cost time

Source: CINCINNATI TIME RECORDER CO.
1731-35 Central Ave., Dept. I-1, Cincinnati 14, Ohio

Model 100-SM

Drive is by a Telechron synchronous motor for operation on 110-volt 60-cycle ac. In this new Sentinel time recorder. Overall dimensions are about 9½ by 5½ by 9¾ inches. Weight is 13¼ pounds. The printing mechanism makes a clear legible impression on a worker's time card. List price for two Full-Vue 10 pocket time card racks and 500 time cards with the new recorder is $110.50 plus tax.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14144

REMOVES FUMES—DUST FASTER!

High Quality PRESSURE BLOWER

only **$49.50**

REG. PRICE $70.00

For the fast, efficient elimination of welding fumes, sawdust, or other air impurities, you can depend on this precision-made, all-aluminum high-pressure blower. Made with 5½" inlet and 3½" outlet. Enclosed ½ H.P. Westinghouse single phase motor, 115 V. A. C. provides 3450 R.P.M. and up to 450 C.F.M. Immediate delivery! Ask for #BLSOW.

STANDARD ELECTRIC MFG. CO., INC.
WEST BERLIN 12, N. J.

If you write maker identify as IEN - 14145

It's NEW!

It's FAST! TOLEDO SPEEDWEIGH® OVER-UNDER SCALES

Here's *new speed with accuracy* for you in check weighing, packaging, many other operations today . . . 3 sizes—to 5 lb., to 20 lb., to 50 lb.! Shadowfree wide-angle reading . . . accurate to 1/64 of an ounce . . . new improved knife-edge check link system . . . *exclusive* "coined" bearings for greater accuracy, longer life . . . stainless steel beam . . . enclosed levers in one-piece housing . . . choice of platters and scoops . . . many more *plus* features! Write for bulletin 1416. Toledo Scale Company, Toledo 1, Ohio.

TOLEDO® Headquarters for SCALES

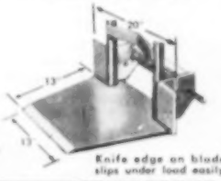
If you write maker identify as IEN - 14146

ECONOMY *Shovel Truck*

FOR HEAVY DUTY SERVICE

A choice of either 6" or 8" diameter wheels, interchangeable at any time by a simple shift of axel position on the truck frame, is a practical feature of this sturdy hand truck.

This rugged all steel truck is ideal for handling heavy cartons, kegs, boxes and crated machine parts. Tubular handles are 51" high.



Knife edge on blade slips under load easily

DIA.	WHEELS TREAD	RECOMMENDED CAPACITY AND USE	PRICE
6"	Semi-Steel Roller Brg.	Up to 1000# on smooth, hard floors	$29.48
	Solid Rubber Durex Brgs.	Up to 500# on finished floors	$32.16
	Semi-Steel Roller Brg.	Up to 1000# on rough floors	$34.84
8"	Semi-Pneumatic Rubber Roller Brg.	Up to 500# on uneven floors	$36.18

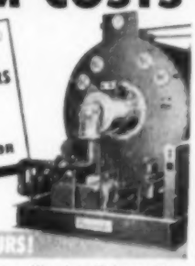
Order from your jobber or direct from

ECONOMY ENGINEERING CO.
4502 W. Lake Street, Chicago 24, Ill.

PRICES NET F.O.B. CHICAGO

If you write maker identify as IEN - 14147

CUT STEAM COSTS



Powermaster® PACKAGED AUTOMATIC BOILERS with patented VARIFLOW® Combustion

SAVE FUEL and MAN-HOURS!

Thousands of Powermaster users are now getting top efficiency and low-cost steam or hot water for processing and heat after replacing out-of-date boilers with this modern, fully automatic, "packaged" steam generator.

- **High efficiency cuts operating costs as much as 40%**
- **Packaged design saves excessive installation costs**
- **Automatic operation frees engineer for other duties**
- **Mounted on steel base—no bricking required**
- **Delivered fully wired and factory-tested**
- **Prompt service by factory-trained men**

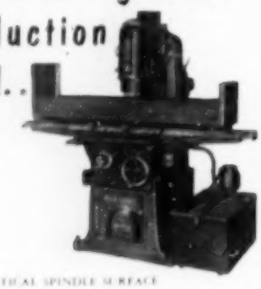
15 to 500 HP—FOR HOT WATER AND FOR STEAM UP TO 250 P.S.I.—for light oil, heavy oil, gas and combination gas-oil firing. Built to A.S.M.E. specifications and approved by Underwriters' Laboratories.

FREE CATALOG MAILED PROMPTLY

ORR & SEMBOWER, INC.
860 Morgantown Rd. Reading, Pa.

If you write maker identify as IEN - 14148

...the toolroom grinder with production potential..



ABRASIVE NO. M-14 VERTICAL SPINDLE SURFACE GRINDER brings big-grinder productivity down into the small grinder class. You can't beat it for quick grinding of flat work — such as dies, washers, punches, spacers, parallels, shapers, raising blocks, production parts . . . Abrasive No. M-14 has a table working surface 24" long x 8" wide with 12" of vertical capacity. For precision finishing of small production parts, this surface grinder can be equipped with circular grinding attachment and rotary magnetic chuck. Whatever the work, you can count on Abrasive No. M-14 to hold size within extremely close tolerance limits . . . to produce very fine surface finishes and to maintain a high degree of parallelism and flatness . . . Get full details on this versatile surface grinder. For descriptive bulletin, write Abrasive Machine Tool Co., 18 Dunellen Road, East Providence 14, Rhode Island.

ABRASIVE

Abrasive Quality is Reflected in the Stock of Your Supplier

If you write maker identify as IEN - 14149

For 30 years, we have been working with all kinds of metals . . . making all sizes and types of crankshafts, eccentric shafts, and drive shafts to precise and exacting specifications. Our manufacturing skill, combined with our experience, produces shafts of absolute fit—eliminates reworks and rejects.

If you use shafts in your product, regardless of your requirements, you can look to us as a dependable source of supply. Send us your specifications today. We will contact you promptly.

YORK *Electric & Machine Co., Inc.*
YORK, PA.

Makers of BILTWELL•FOREMAN *Axle Shafts for the automotive industry . . . with world wide distribution.*

"WHERE PRIDE OF PRODUCT PREVAILS"

If you write maker identify as IEN - 14150

SPEEDEX AUTOMATIC WIRE STRIPPER!

NEW!

NET PRICE $4.95
$8.25 List

STRIPS BOTH STRANDED AND SOLID WIRE

★ Fully Automatic
★ Single Squeeze
★ Delayed Action
★ Safe - Will Not Crush Fine Stranded Wires

SEE YOUR DISTRIBUTOR OR WRITE FOR LITERATURE AND INFORMATION

WOOD SPECIALTY *Manufacturing Co.*
909 Taylor Avenue, Rockford, Illinois

If you write maker identify as IEN - 14151

STORING . . Steel lockers to connect between ventilating ducts

Source: PENN METAL CORP.
50 Oregon Ave., Philadelphia 48, Pa.

Dry and odor free

Air-Flow trade names a new steel locker to flush mount in a wall, or island mount, with ventilating ducts above and below. The locker is based upon a design by Scott Paper Company's washroom advisory service. The company is prepared to recommend layouts under given conditions and also recommend the ventilating equipment to condition and handle the air.

Construction employs 24-gage flanged steel with 16-gage doors, also flanged, on 1-in. vertical steel angles. A latching device, made of 20 gage steel, provides for automatic prelatching and prelocking. The device is concealed in the door channel and is operated by a chromium plated handle. The doors also can be locked by a key or padlock.

The bottom and top of the locker are equipped with louvers for air inlet and outlet. Inside is a perforated top shelf with a coat rod. At the bottom is a slanting removable plate louver equipped with a shoe angle. On the sides and back are hat holders and hooks.

Angles extend toward the front to support a 9½-in. shellac finished wood bench. Locker finish is in baked enamel, red, green, brown or other specified color. Front to back dimensions of a single unit are about 18 inches. Eleven units assemble side by side in an overall length measuring a little under 14 feet. Interior height is about 64 inches. Bench height at the front of the new locker is about 16 inches.

If you write maker identify as IEN - 14152

CONTROL . . Electronic equipment regulates generator output frequency

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Will not "hunt"

Load change upon a motor generator set, consisting of a dc. motor and ac. generator, causes the generator output to shift slightly in phase and to actuate this new frequency control. As the alternator phase begins to lag, the current in the control winding on the main shunt field of the dc. motor is increased. Thus the control field bucks the main field and increasing control field current tends to cause an increase in motor speed that will hold the alternator in synchronism with a tuning fork signal. Output will not gain or lose a cycle relative to standard.

The control consists basically of the tuning fork and a phase comparator enclosed in a housing measuring 6 by 24 by 36 inches. Operation is on 110-volt 60-cycle ac. The motor driving the generator operates on 110 or 220-volt dc. with other ratings subject to special order. The control will handle a motor generator unit rating not more than 10 kw. It is available in 50, 60 and 400-cycle, single or three-phase assembly.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14153

TRY THIS NEW FASTENER—FREE!

For fastening laps of corrugated asbestos or plastic roofing sheets, new work or maintenance — all without scaffolding —

HOLEGRIP
(Patent Applied For)

Eliminates all interior scaffolding.
Puts entire crew topside.
Increases fastening speed.
Completely seals holes, new or old.

Here is the fast, 3-step HOLEGRIP method:

1. Drill ½" hole through sheets at side lap.
2. Insert HOLEGRIP; toggle drops to horizontal position, engages nut.
3. Complete fastening by tightening with power nut-runner. Weath-R-seal seals the hole.

THAT'S ALL! Total time: 20 seconds!

For complete information and sample fastener, with tool data, write:

FABRICATED PRODUCTS COMPANY
1952 Water Street West Newton, Pa.

If you write maker identify as IEN - 14154

REDUCE THE OVERHEAD THAT IS UNDERFOOT

Darnell Casters

Free Manual

DARNELL CORP., LTD.
DOWNEY, (Los Angeles County) CALIF.
60 Walker Street, New York 13, N.Y.
36 North Clinton, Chicago 6, Illinois

If you write maker identify as IEN - 14155

POWER ON THE SPOT

PLUGMOLD 2000 with SNAPICOIL by WIREMOLD

EASY TO INSTALL!
PRE-WIRED Snapicoil receptacles snap right into raceway cover in a continuous run!

Plugmold 2000 makes electrical power more accessible throughout your plant and offices! It can be easily mounted on any wall surface without tearing out partitions or floors . . . provides Duplex or NEMA grounded outlets every 30 inches . . . can be just as easily mounted on the front edge or backboard of production benches to provide needed multiple outlets for drills, soldering irons, any other appliance — safer, shorter cords can be used. Clusters of more closely spaced outlets are available.

Write today for the new, free Plugmold book!

PLUGMOLD 2000

WIREMOLD'S *New* multi-outlet system

THE WIREMOLD COMPANY
Hartford 10, Connecticut

If you write maker identify as IEN - 14157

HANDY POCKET THERMOMETERS

make your testing easy

BINOC* tubing, the optically-correct thermometer tubing, provides a wide angle of vision and high magnification . . . the column is easily visible . . . there are no confusing bore reflections. Available in many ranges, red liquid or mercury filled.

For full information about Taylor's complete line of precision quality laboratory instruments, write for **Catalog LH.** Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada.

Mercury filled, in non-sparking brass armor. Length 5½". Ranges available: minus 50 to + 120°F and 0 to 220°F. In 2° divisions.

Red liquid or mercury filled, complete with metal pocket case. Just 5½" long. Made in variety of ranges and 1° or 2° divisions to meet all requirements.

*Reg. U. S. Pat. Off.

TAYLOR INSTRUMENTS MEAN ACCURACY FIRST

If you write maker identify as IEN - 14158

REED ENGINEERING COMPANY

1009 W. FAIRVIEW • CARTHAGE, MISSOURI

U12-180

UNIT TYPE AUTOMATIC WELDING TURNING ROLLS

- COMBINES ADJUSTABLE TRACK SUPPORT & TURNING ROLLS INTO ONE FIXTURE
- IN 4 STANDARD MODELS—CAPACITIES UP TO 9 TONS, 12 FT. DIAMETER
- LARGER SIZES AND SPECIAL DESIGNS BUILT TO YOUR ORDER

WRITE FOR BULLETIN 81

✱ MODERN METALWORKING MACHINES
✱ BENDING ROLLS ✱ WELDING FIXTURES
✱ FORMING MACHINES ✱ TURNING ROLLS
✱ SPECIAL MACHINES & FIXTURES

If you write maker identify as IEN - 14159

HUMIDITY

Within 1° Wet Bulb

If controlled air conditions are necessary for some important testing and research, here is a cabinet that provides 6 cubic feet of controlled air in constant circulation. Within the range of 40° F. to 140° F., this cabinet will maintain both dry and wet bulb temperature within 1° F.

Heating and cooling, humidifying and drying, are all controlled automatically and uniform conditions are maintained as long as the unit is in operation. Outside indicators reveal the conditions inside the box at all times.

AIRE-REGULATOR

Constant Temperature and Humidity Cabinets are now in use by prominent laboratories in many lines for testing and research. Among the users are food manufacturers of all kinds producing bakery products, flour, packaged mixes, cheese, yeast, beer, candy and meat products; others are manufacturers of pharmaceuticals, photographic supplies, paints and varnishes, chemicals, insulating materials, instruments, box board, paper tape and crude oil products. Wherever there is a need for checking the action of temperatures and humidity there is a need for an Aire-Regulator. Write for bulletins and tell us your requirements.

FOOD TECHNOLOGY INC.
5921 Northwest Highway
Chicago 31, Illinois

FOOD TECHNOLOGY, INC.

If you write maker identify as IEN - 14160

VALVE . . Solenoid operated for air suction line, 3 to 8 in. sizes

Source: KINDT-COLLINS CO.
12657 Elmwood Ave., Cleveland 11, Ohio

The Ventomatic

A solenoid enclosed in the housing at the side of this new valve operates a pivoted gate between open and closed positions. When it is open the valve presents an unobstructed passage equal to its rated size. Intended application is in air suction lines as on dust collectors from grinding, polishing and wood working equipment. The solenoid connects into the machine's motor circuit so the valve will close when the machine is idle and will open as soon as it is started. This prevents exhaust of warm air from an area when a machine is idle. Six sizes in the line apply in ducts measuring 3 to 8 in. in diameter.

If you write maker identify as IEN - 14161

PLASTIC . . Thermosetting, in colors to mold large housings

Source: LIBBEY-OWENS-FORD GLASS CO.
2114 Sylvan Ave., Toledo 6, Ohio

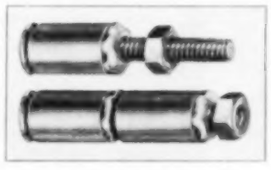
Specifications upon request

Radio cabinets and clock cases are examples of products for which the company's new urea molding compound has been developed. It is available in a range of colors. It molds readily and presents excellent surface appearance in molded form. It is non-electrostatic, is high in dielectric strength and scratch resistant. It will not burn.

If you write maker identify as IEN - 14162

FASTENING . . Anchor bolt for concrete has lead expansion sleeve

Source: SUPER-GRIP ANCHOR BOLT CO.
3337 N. 22nd St., Philadelphia 40, Pa.



Drill, insert, tamp

Bolt sizes range from 3/16 to ½ in. in this new Super-Grip anchor bolt. Length is to 5 inches. The unit is made up of the bolt with its tapered head and one or more sets of lead sleeves and dished washers. Application is in a drilled hole in a concrete or masonry wall.

Tightening is by means of a tamping tool, one of which is provided for each 100 bolts. The tool expands the lead against the bolt head. At the same time repeated blows flatten out the dished washer so it bites into the wall of the hole and reinforces the lead to provide a permanent solid anchor.

All Makers of Those And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14163

Speed Way Speed Sander

Motor Driven 3/16" Orbital Motion

$34.50

Makes a hundred tedious jobs fast and easy. Will sand to the bare wood or metal, featheredge, or smooth and polish to a "piano finish."

Powerful direct-connect, 3450 r.p.m. 110 v., A.C. air-cooled motor. No gears, nor gear-housing to collect grit and dust. Sealed ball-bearing thruout. Cast-aluminum body and chrome plated—in hand weight only 5 lbs. Natural grip, all-position handle with sliding thumb switch and 3 wire rubber-covered cord.

Sands Cleans Smooths Polishes

Three 4½" x 6½" coverings cut from standard 9" x 11" abrasion sheet.

WRITE FOR CIRCULAR

Speed Way MANUFACTURING CO.
1985 So. 52nd Avenue • Cicero 50, Illinois

If you write maker identify as IEN - 14164

5 FIRMS ALONE PURCHASED. . .

2,165,458 LBS.

SPEED PATCH

WORLD'S FINEST, FASTEST, FLOOR FIXER!

REPEAT ORDERS ARE PROOF OF A PRODUCTS MERIT

Many millions of pounds of Speed-Patch are in use. Five firms alone, purchased 2,165,458 lbs. The reason is simple. Speed-Patch is unequalled for patching worn, cracked, cratered floors. Easy to apply. Takes only one minute per square foot. No waiting to set or dry . . . truck over it immediately. It's tough, long-lasting, economical, ready-mixed. Write for details NOW!

ROCK-TRED Corporation
Manufacturers of a Complete Line of Building Maintenance Materials
7440-7450 North St. Louis Avenue • Skokie, Illinois
In Canada: Rock-Tred Corporation (Canada) Limited, Toronto 9

If you write maker identify as IEN - 14165

ALL-PURPOSE SLINGS

with new Roebling Tapered Sleeve Splice . . . stronger . . . cost less!

NEW ROEBLING All-Purpose Slings with the Tapered Sleeve Splice are delivered ready for the job. The unique rolled loops and tapered sleeve attachments develop the full strength of the rope . . . cost less than ordinary tucked splices . . . save "splicing your own".

Made of Roebling "Blue Center" Steel Wire Rope, All-Purpose Slings are unsurpassed for toughness and dependability . . . flexible and easy to handle . . . come in all standard lengths and sizes. Send for full information and for the free "Sling Data Book." John A. Roebling's Sons Company, Trenton 2, New Jersey.

ROEBLING

If you write maker identify as IEN - 14166

Now... Get EXACTLY the drill you need!

No longer must you compromise on drills that are "almost" right for your work. 54 separate and distinct PET Superduty Drill models allow you to choose the *exact* drill characteristics you need . . . for more efficient work and longer drill life.

Quality? There isn't a finer drill made! Each PET Superduty Drill has vibration-free, dynamically balanced armatures; precision-cut gears; ample reserve power; big, heavy-duty bearings; forced ventilation. These are *standard* features—not "optionals" that build up the cost. And, *the price is lower than you think!*

Get all the facts! For free catalog and name of your PET Distributor, write today to Dept. IE-122

PORTABLE ELECTRIC TOOLS, INC.
320 West 83rd Street, Chicago 20, Illinois
In Canada: Portable Electric Tools, Ltd., Toronto, Ontario

If you write maker identify as IEN - 14167

SCHRAMM
SMALL INDUSTRIAL COMPRESSORS

Positive controlled force-feed oiling to every wearing surface.

Main Bearings—Tapered roller bearings. Crankshaft supported at both ends.

Larger radiation fins.

SIZES—½ HP to 5 HP. MOUNTINGS—Horizontal or vertical air receivers or on base. DRIVES—Electric motors or gasoline engines.

WRITE FOR CATALOG GC-52.

SCHRAMM, INC.
The Compressor People
WEST CHESTER • PENNSYLVANIA

If you write maker identify as IEN - 14168

B.F.Goodrich

How do you determine the right size tire?

Need tires to resist cuts and bruises?

TW ANALYSIS
TIRE AND WHEEL

man shows you how to slash industrial tire costs . . .

You can save as much as 50% on industrial tire costs by calling in a B. F. Goodrich Tire and Wheel Analysis man. He is trained to:

1. study your equipment, loads, speeds, hauling surfaces and any unusual materials handling problems you have,
2. make suggestions for better, more efficient maintenance that alone can save you 10 to 20%,
3. and recommend the right tires—type, size, tread compound and tread design—for your particular operations.

You can be sure the advice you get is unbiased, for B. F. Goodrich makes a *complete* line of industrial tires—solids, pneumatics and semi-pneumatics in a wide range of tread designs and compounds.

Hundreds of industrial tire users are cashing in on the TW Analysis Plan—are getting more economical, more efficient service from industrial tires and wheels. Take advantage of this plan by sending in the coupon or calling your B. F. Goodrich retailer. He sells and services a complete line of industrial tires. A special TW Analysis Plan is available for manufacturers of industrial hauling equipment.

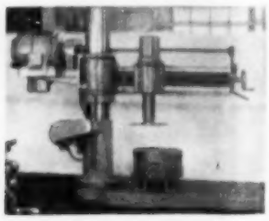
The B. F. Goodrich Co.
Department TW-217, Akron, Ohio
Please send me:
☐ Additional information on your new Tire and Wheel Analysis Plan
☐ A free copy of your "Industrial Tire Guidebook"
Name
Title
Company
City State

B.F.Goodrich

If you write maker identify as IEN - 14170

SAWING . . Radial arm machine to cut gates and risers from castings

Source: ACME SAW & MFG. CO.
1440 E. 47th St., Cleveland 14, Ohio



Clean, accurate cut

Radial arm, 6 ft. in length, carries a 15-hp. motor to drive a vertical spindle that slides along the arm and carries a horizontal circular saw blade. The arm can be rotated around the 10-in. supporting column. Cuts can be made to a 55-in. radius. The arm can be raised and lowered by a second motor.

Maximum height is 40 in. above the base for the saw blade. Work can be mounted on the base or on a stationary rotating table. The saw blade can be swung in to make a cut or can be slid along the radial arm after the latter has been locked. For this purpose a crank operated screw is assembled in the arm. Controls center at the outer end of the arm.

If you write maker identify as IEN - 14171

TESTING . . Hardness instrument for readings on Rockwell A to E scales

Source: J. P. NEWMAN CO.
819-23 Raymond Ave., Alhambra, Calif.

Please note our error

The company calls our attention to an error in calling its new hardness tester, previously described IEN-11757-52 a Rockwell instrument. Actually it is a Newman hardness tester using the "Rockwell Scale".

If you write maker identify as IEN - 14172

TRUCK . . Two wheel hand unit with foot operated hydraulic load lift

Source: PORT-A-LIFT CO.
2996 N. Euclid Ave., Dept. E, Bay City, Mich.

$135 and $198

One man can handle a ¼-ton load with this new hydraulic lift hand truck. It can be equipped with a platform or with forks which are raised by operating a foot pedal or lowered by means of a hand release lever for controlled movement. Two assemblies provide maximum elevation to 36 and 58 inches.

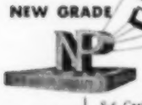
The smaller unit carries a 14 by 24 in. platform. The larger one is equipped with 27-in. forks adjustable to 24 in. in maximum width. Mounting for both units is on wheels measuring 8 by 2½ inches. Shipping weights of the two models are 140 and 240 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14173

NEWCOMER CARBIDE *Specialists* will gladly show you how to

WITH THE NEW GRADE S-6 CUTTING CARBIDE



Highlights of the NEW S-6

S-6 Carbide is new and different — *industry-proven* on machining Armor plate, rough steel forgings and castings. Even though S-6 Carbide can be used at high machining speeds, its greatest tool life is obtained at speeds slower than those at which other grades of carbide can be successfully used. S-6 Carbide makes deeper cuts because it can be set for heavier feeds. S-6 Carbide, because of its extremely high strength, is excellent for interrupted cuts.

Write today for Catalog No. 108 which shows all other standard grades of Newcomer Carbides.

NEWCOMER PRODUCTS, INC.
General Sales Offices
PITTSBURGH 21, PENNA.
Plants at LATROBE, PENNA.

If you write maker identify as IEN - 14174

SUB-MINIATURE CANNON PLUGS

tiny but *rugged*

Series D—the new sub-miniature Cannon Plugs have 15 contacts for #20 or #22 AWG stranded wire. Others in the series have 25, 37 and 50 contacts. These new plugs meet a long felt need of the Electronics Industry for a sturdy, versatile, and extremely compact connector for use on miniaturized equipment of all kinds. Junction shells make them useable as (1) rack and panel (2) box (3) wall, or (4) cord connectors.

Contacts are machined from copper base alloy, gold plated, rated 5a. High dielectric insulators. Minimum flashover 1000 v. rms. Write for bulletin D-1.

CANNON ELECTRIC

SINCE 1925—Factories in Los Angeles, Toronto, New Haven, Benton Harbor. Representatives in principal cities. Address inquiries to Cannon Electric Company, Dept. H-122, P. O. Box 75, Lincoln Heights Station, Los Angeles 31, Calif.

If you write maker identify as IEN - 14175

Immediate Shipment

ALL PRICES F.O.B. FACTORY PHILA.

COMPLETE LINE OF SHOP EQUIPMENT

STYLE 300 STACKING BOX

Just right for small parts. Light in weight. Easy to handle. Equipped with drop handle each end. Runners save wear on bottom of box and act as positive stacking lock.

Product Number	Width	Length	Height	Gauge Steel	Price Plain	Price Green
301-20	6"	9"	3½"	20	$ .85	$ .98
302-20	8"	12"	4"	20	$ .96	$1.09
303-19	9"	13½"	4½"	19	$1.20	$1.38

STYLE 500 STACKING BIN

Open front makes contents easily accessible when boxes are stacked. Rigid handle on back of bin.

Product Number	Width	Length	Height	Gauge Steel	Price Plain	Price Green
501-18	10"	16"	6"	18	$1.84	$2.00
502-18	12"	18"	8"	18	$2.51	$2.80

STYLE 600 STACKING BOX

An ideal all purpose shop box with rigid handle and hook hole each end. Sturdy all welded construction. Heavy skids act as positive stacking lock and reinforce box at point of maximum wear.

Product Number	Width	Length	Height	Gauge Steel	Price Plain	Price Green
601-18	10"	16"	6"	18	$1.55	$1.71
602-16	12"	18"	8"	16	$2.29	$2.58
603-18	12"	18"	6"	18	$1.84	$2.05
603-16	12"	18"	6"	16	$2.11	$2.35

MANY OTHER STYLES AND SIZES AVAILABLE.
PHONE—WIRE—WRITE BAldwin 9-1805

BAY PRODUCTS, INC.
3011 N. 16th ST. PHILADELPHIA 32, PA.
COMPLETE CATALOG ON REQUEST.

If you write maker identify as IEN - 14177

Will You Have Enough GAS this Winter?

THIS OVEN DESIGNED FOR GAS . BUT IT'S FIRED WITH OIL VAPOFIER

The S.O.S. Company, in Chicago, has insured production against losses due to seasonal gas curtailment by installing Vapofier as gas standby. Change-over to and from gas is made without loss of flame at the burners in a matter of seconds. The same piping, burners, automatic controls and safety devices are utilized.

Capacities from 70,000 to 4,000,000 B.T.U.'s per hour

Should your processing be annealing, galvanizing, heat treating, glass manufacturing, industrial drying, paint, core or bread baking, there's a Vapofier to fit your needs.

Do away with Gas Shortages this winter. Send for FREE booklet "Make Your Own Gas with Vapofier."

VAPOFIER CORP., 10326 S. Throop St., Chicago 43, Ill.

If you write maker identify as IEN - 14178

Production Soldering
BETTER JOBS FASTER
more Economically

Save Labor, Solder . . . Increase Production

This new MOGUL unit is built to deposit silver, lead, and tin base solders in a liquid or semi-liquid form . . . faster, cleaner . . . to any constant moving part. This new automatic soldering gun replaces the soldering bath, hand soldering, and in many cases, expensive fixtures. Quickly adapted to various size parts. Adjustable to speed of work . . . gives pin-point location for cleaner seams.

BETTER WORK APPEARANCE

Deposits solder or brazing wire to the exact spot for cleaner seams. This new MOGUL soldering gun is now in wide use, saving time and money, increasing production, and turning out a better-looking product.

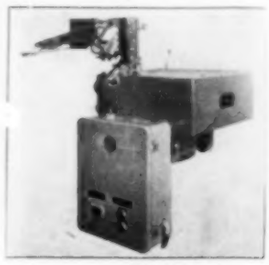
Write today for new MOGUL SOLDERING GUN bulletin

METALLIZING COMPANY OF AMERICA
Dept. IEN • 3520 West Carroll Avenue
Chicago 24, Illinois
Telephones: SAcramento 2-3710

If you write maker identify as IEN - 14180

PRESS TOOLS . . Vacuum swing feed picks up and feeds blanks to a press

Source: V & O PRESS CO.
10 Union Turnpike, Hudson, N. Y.



Ask for Feed-O-Matic Bulletin

Automaton Model F3 is a new cam operated swing feed for a press. It employs vacuum to pick up a work blank direct from a single vertically adjustable nested feed position outside of the press area. It swings the blank into place between the dies on a press and positions it accurately. Then it actuates the press clutch and simultaneously retracts to pick up the next piece while the press makes a blanking or forming stroke and ejects the work.

The swing motion and sequence of actions are controlled by a motor driven cam shaft. The act of depositing the blank in the dies operates a push button switch. If the work is not placed properly, so this switch circuit does not close, it is impossible to close the circuit that will actuate the press clutch. Thus no harm can result from improper loading.

The vacuum action can be employed direct on work suited for this type of pick-up. It is used in connection with mechanical fingers to pick up other types of work. The feed can be employed on presses with beds measuring to 38 in. from left to right. It will handle blanks to 10 in. in diameter. The operator is required only to place blanks in pick-up position.

If you write maker identify as IEN - 14181

FLOORS . . Steel dockboard, wheel mounted for one man to handle

Source: FREEHAUF MILLWRIGHT SERVICE
835-39 Logan St., South Bend 15, Ind.

2½ ton per axle

One Man Ramp trade names a new 5 by 6 ft. steel dockboard. It is mounted on pivoted wheels and equipped with a removable handle. One man can roll the 450-lb. assembly into place between a loading platform and a vehicle truck. He brings the forward end into overlapping position with the truck, then lowers the board from its wheels by releasing the handle hook and rotating the handle through an arc to face toward the front.

The wheels will clear the platform in this position and the leading and trailing edges of the board will be in firm position. At the same time he lowers the two holding hooks over the edge of the platform so the board cannot slide out of place. The wheels are equipped with anti-friction bearings. The assembly permits a variation in height to 15 in. between the platform and the truck floor.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14182

The HANDY KNURLER

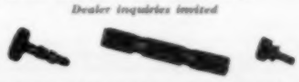
Save set-up time, operations and parts...Use Handy Knurler for individual knurling jobs — also for certain types of production work.

HAND OPERATED LIKE A PAIR OF PLIERS

HANDY KNURLER is used with lathe or drill press. Or hold work in vise and rotate Knurler around it. Concentric and off-center surfaces knurled with precision. Worn and undersized armature shafts, axles, spindles, pins enlarged to permit parts to be re-used. Knurled surfaces may be machined. Deep-Cut grooves retained to hold lubricants.

★ Quality heat-treated steel, blued for rust-protection. No other tool like it. Knurler complete set of 3 knurl rollers for medium diagonal patterns $12.50 postpaid. Different patterned rollers—$3.60 for set of 3. Order direct, or write for literature.

Dealer inquiries invited



M.P.A. CO., 1678 W. 17th PL., LOS ANGELES 6, CALIF.

If you write maker identify as IEN - 14183

COFFING HOIST CO., Danville, Illinois

Quik-Lift Electric Hoists • Hoist-Alls • Safety-Pull Ratchet Lever Hoists • Mighty-Midget Pullers • Differential Chain Hoists • Load Binders • I-Beam Trolleys

Sold by industrial distributors everywhere.

If you write maker identify as IEN - 14184

An extra-powerful AC/DC motor linked to a super strong gear train makes the Thor ½" portable drill stall-free under even the heaviest pressure. Its 11" over-all length and light weight speeds close-quarter jobs and permits easy, one-hand operation.

Built for hard wear, Thor drills have 8 over-size, precision ball bearings plus die-cast housings, center plates and armature supports — moving parts can't help but stay in permanent alignment. In addition to drills, Graybar distributes the complete line of famous Thor tools — tappers, impact wrenches, screw drivers, nut setters, saws, hammers, sanders, nibblers, and grinders. You can get complete information on any of them from your local Graybar Representative. *Graybar Electric Co., Inc., 420 Lexington Avenue, New York 17, N. Y.* 212-1212

Call Graybar *first* for . . . Everything Electrical Graybar

If you write maker identify as IEN - 14185

A – Deep crack. B – Tamping Smooth-On in. C – Crack completely sealed.

If You've Never Used SMOOTH-ON, *read this:*

Smooth-On No. 1 Iron Cement is a metallic powder which you mix with water to the consistency of putty. You tamp it, while still soft, into a crack or hole, making sure to force it against all surfaces. With Smooth-On you don't need to use heat or special gadgets. As it hardens, it expands slightly, clinging tightly in place. The repaired part is ready for use as soon as Smooth-On sets hard. Keep Smooth-On handy for both emergency and routine maintenance repairs. Get it in 7 oz., 1, 5, 20, or 100 lb. size. If your supply house hasn't Smooth-On No. 1, write us.

FREE 40-PAGE REPAIR HANDBOOK

Shows many industrial and home repairs made with No. 1 and other smooth-on Cements. Leaks stopped, cracks sealed, loose parts made tight. 170 illustrations. Drop us a line for YOUR free copy.

SMOOTH-ON MFG. CO., Dept. 1
57 Communipaw Ave., Jersey City 4, N. J.
50-293

Do it with SMOOTH-ON
THE IRON REPAIR CEMENT OF MANY USES

If you write maker identify as IEN - 14186

Every factory or shop subject to severe vibration, concussion, intermittent radiant heat and other causes of glass pane breakage, should be glazed with shatterproof, crackproof RESOLITE.

Pale green Resolite provides high light transmission, excellent light diffusion and visual comfort. Resolite is molded of polyester resins, reinforced with Fiberglas mat. It is unaffected by weather extremes of heat, cold or moisture and inert to industrial fumes.

For glazing partitions or similar use, Resolite is supplied in flat sheets up to 42" x 96", in standard or extra heavy weights, and in eight colors. Sheets or lights are cut at the factory to specified dimensions, but may be cut on the job, when necessary, with a hand or disk saw. Standard glazing methods are used to install Resolite.

Resolite is also supplied in standard corrugated roofing sheets for simplified skylighting.

For complete information and name of nearest distributor, write:

Route 19

RESOLITE Corporation • ZELIENOPLE, PA.

If you write maker identify as IEN - 14187

Piped for Dual Service

The 125,000-gallon Horton elevated tank at right, piped for dual service, was recently installed at the Deering-Milliken Mills, Hatch Mill at Columbus, N. C. Water from the upper portion of the tank is used for general service—water in the lower section is reserved for fire protection. This set-up provides the advantages of water under gravity pressure for general needs and, at the same time, insures a reserve of water for fire protection.

Horton elevated water tanks are built in capacities from 5,000 to 3,000,000 gallons. When requesting quotations, please include capacity, height to bottom and location.

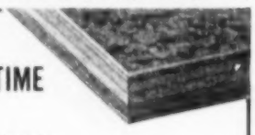
CHICAGO BRIDGE & IRON COMPANY

2123 McCormick Building • Chicago 4, Illinois

Atlanta • Birmingham • Boston • Cleveland • Detroit • Houston
Los Angeles • New York • Philadelphia • San Francisco
Seattle • Tulsa • Washington, D. C.

Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

If you write maker identify as IEN - 14188



Cuts
PRODUCTION TIME
Cuts
FABRICATING COST
and does a better job for you...
that's **ARMORPLY®!**

Waterproof plywood—any thickness—faced one side or both with metal—any metal of your choice—that's ARMORPLY! The metal is permanently bonded under pressure to the hardwood core—providing a panel far stronger than either wood or metal alone.

Made to order for each special use—in panels exact in all dimensions—Armorply can help cut your production time and cost, as it has already for makers of hundreds of varied products, from elevator cabs and truck bodies to tote boxes and freezers. For full details use coupon below for free sample and descriptive literature.

FREE SAMPLE!

UNITED STATES PLYWOOD CORPORATION
World's Largest Plywood Organization
55 West 44th Street, New York 36, N. Y.

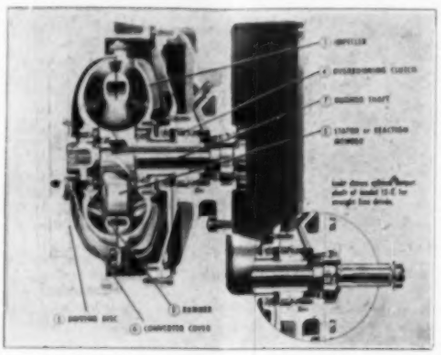
Please send me literature and free sample of Armorply.

Name _____
Company _____
Address _____
City _____ State _____

If you write maker identify as IEN - 14189

DRIVE . . Hydraulic transmission acts as torque converter and coupling

Source: FULLER MFG. CO.
Prouty & Bayles St., Kalamazoo 14, Mich.



For heavy duty mobile service

Model 12 is a new hydraulic transmission for application on engines rating 180 to 225 ft. lb. of torque in the 2,200 rpm. range. It provides 2 to 1 torque multiplication at the start and 1 to 1 coupling operation upon coming up to speed. Type S is equipped with a 1⅛-in. spline shaft for straight line drives with a universal joint. Type A has a flanged output shaft and a No. 3 SAE flywheel housing to permit installation of a second flywheel, an automotive clutch or a mechanical transmission. Type A is shown in the illustration with the Type S output end in the inset view.

The assembly consists of three major elements, the impeller or pump 1, the runner 2, and the reaction member or stator 3. The reaction member is mounted on an over-running clutch 4 which permits rotation with the runner while in the coupling range. Power is delivered from the engine flywheel through the thin flexible driving disc 5 and the converter cover 6 to the impeller. Rotation of the impeller throws the hydraulic oil into the vanes in the runner which is splined to the output or runner shaft 7.

Oil in the closed circuit leaves the runner at the inner edges of the vanes and enters the reaction member. The vanes in this member are curved so they turn the oil back into the impeller in the direction of original flow. The reaction member is locked to the housing through the over-running clutch in the converter range and thrust reaction, from changing the oil direction by the reaction member vanes, is taken by the housing. This thrust load, imparted to the oil stream, creates the torque multiplication at the start.

As the torque requirement on the runner shaft is reduced, the runner speed will increase to the point where the oil, emerging at inner edges of the vanes, will strike the reaction member vanes on the reverse side. The over-running clutch on which the reaction member is mounted then will permit it to start rotating with the runner. This action changes the unit into a straight hydraulic coupling which does not multiply the engine torque. Oil pressure is about 15 pounds.

Identify as IEN - 14190

Your help is requested by Pressed Metal Institute in its desire to accumulate a library of information on safety devices for presses and related equipment. Manufacturers of such equipment are invited to send data. Press users are invited to tell about the equipment they have made for their own use.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14191

HERE'S the new-design tube that gives

ELECTRONIC HEATING "PLUS-ENDURANCE"

For today's rugged production pace in Metals, Plastics, Wood, Rubber . . .

Federal's
F-892
(F-892-R Air-cooled)

For 10 & 20 KW Units

OUTSTANDINGLY DEPENDABLE In MOMENTARY OVERLOADS!

SEALING, soldering, brazing, bonding, molding, annealing, drying, pre-heating . . . whatever your application . . . Federal's F-892 really keeps production rolling . . . *by reducing time-wasting shut-downs for tube replacements . . .!*

FIRST with the new proved-design **DOUBLE HELICAL FILAMENT**

- Does away with bowing
- Eliminates filament-to-grid shorts
- Greatly increases tube life

Write for details

Federal Telephone and Radio Corporation — IT&T — 100 KINGSLAND ROAD CLIFTON, N. J.

MORE SPEED MORE SUPPORT

PADDOCK BALL-BEARING BAND SAW GUIDES

Make old band-saws work like new—
Make new band-saws work better!

When a 36 in. machine is equipped with Model 2 guides and the guides are adjusted to hold the blade at a 45 degree angle (see angular adjustment at right, lower picture) material 22 in. wide can be cut to any length. More materials can be cut—blade-breakage is reduced—workmen are better protected—faster output results! Inter-changeable ball-bearing wheels, running with saw blade, give friction free support! Very inexpensive—easily installed and adjusted.

Write for prices and complete information
Give size of machine and material being cut

PADDOCK TOOL COMPANY
Guide Makers Since 1920
1418 Walnut Street • Kansas City 6, Mo.

Paddock BALL-BEARING BAND SAW GUIDES

If you write maker identify as IEN - 14193

best choice . . . . productionwise!

• Ready Tool Company is the world's largest manufacturer of precision engineered centers . . . all exclusive developments of RED-E engineers. Varied sizes, tapers and shanks for EVERY NEED . . . guaranteed to reduce operating costs, increase production, eliminate maintenance. Write for literature.

CENTER Specialists since 1908

READY TOOL COMPANY — 844 Ironstone Ave. Bridgeport 8, Conn.

If you write maker identify as IEN - 14194

do you use POISONOUS carbon tetrachloride?

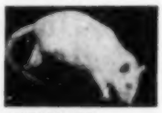
FORMULA 602 SAFER!
Continued use of carbon tet causes severe and incurable damage to liver, kidneys, heart, adrenal glands and nervous system by absorption through skin. Safety authorities caution against its use. FORMULA 602 is 24 times safer than carbon tet!

FORMULA 602 CLEANS MOTORS AND ALL ELECTRICAL EQUIPMENT
FORMULA 602 effectively cleans motors, radio parts, coils, condensers, generators and all electrical equipment. It dries rapidly without leaving a residue, corroding metals or damaging electrical insulation.

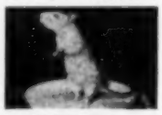
OTHER USES!
FORMULA 602 is used to remove residues of solder flux from contact points, dip tank degreasing of parts and tools, as a diluent and wherever carbon tet is now used for cleaning!

SEND FOR FULL INFORMATION!

RESULT OF TEST BY INDEPENDENT LABORATORY!



CARBON TET
10 rats inhaled 125 parts carbon tet per million parts air for 2 days, 30 minutes each day. All 10 rats died!



FORMULA 602
10 rats inhaled 125 parts Formula 602 per million parts air for 14 days, 30 minutes each day. All rats alive and healthy after test!

the PENETONE co.
BOX IEN-1252 TENAFLY, NEW JERSEY

If you write maker identify as IEN - 14195

LULL side-loading TRAVELOADER

...gives you

Straight-Line MATERIALS HANDLING

One man LOADS...CARRIES... UNLOADS...STACKS...

without BACKING AND TURNING!

Straight-line production methods call for straight-line materials handling if maximum benefits are to be gained. And that's one important way in which Lull Traveloader can step up the efficiency of your operations. One side-loading Traveloader using a straight-line system, can do the work of 2 or 3 conventional machines . . . do it faster and in half the space!

This Bulletin gives you complete information on all the ways in which Lull Traveloader can save you manhours and money. You can't afford to be without this information. Write for your copy . . . TODAY!

LULL MANUFACTURING CO.
362 West 90th Street • Minneapolis 11, Minn.
EXPORT OFFICE: 105 West Fourth St., Cincinnati 2, Ohio
Cable Address: "Rapint"

If you write maker identify as IEN - 14196

You can't beat a soldered connection for electrical conductivity and permanence!

SOLDERED connections eliminate loss of current, fire hazard, radio interference and excess heat which result from loose, corroded, arcing NON-SOLDERED connections.

For over 50 years experts have specified American Beauty Electric Soldering Irons. They know American Beauty Irons are built to LAST LONGER, OPERATE DEPENDABLY and BE SERVICED QUICKLY.

Build better with solder . . . Solder better with American Beauty SOLDERING IRONS

WRITE FOR FREE LITERATURE

Dependable • Durable • Efficient

SINCE 1894

AMERICAN ELECTRICAL HEATER COMPANY
DETROIT 2, MICHIGAN A-108

If you write maker identify as IEN - 14198

STORING . . Transparent trays and metal cabinet to hold small parts

Source: KLEER-VUE MFG. CO.
634-38 Penn Ave., Pittsburgh 22, Pa.

About $5

Clear plastic in molded form with two plastic partitions is employed in the construction of the drawers in this new small parts cabinet. Drawer dimensions are 2⅞ by 6 by 2 inches. A total of 15 drawers assemble to slide in a 20-gage steel housing that measures 15⅝ by 6¼ by 8⅝ inches. A plastic handle and card carrier are on each drawer front. The unit has sufficient strength to hold a volume capacity load of any small parts.

If you write maker identify as IEN - 14199

HEATING . . Hot water coil and control for truck bodies and cabs

Source: LUMINATOR INC.
118-22 N. Peoria St., Chicago 90, Ill.

Complies with ICC Regulations

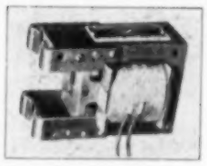
Cargo Heater is a new assembly of finned copper tube, connecting insulated hose lines, a multi-port solenoid valve and a thermostat. The valve assembles on a bracket in the engine compartment of a truck. It connects by means of two hoses to the pump and return lines on the truck engine. It also connects to the usual hot water heater in the operator's cab and through delivery and return hoses to the finned copper tube which is laid in loops on the truck floor.

A floor rack covers the tubes to support the load. The thermostat is located in the truck space to be heated. It is set for a desired temperature to open and close the solenoid valve for engine water circulation through the coil. The heater rates 10,000 to 12,000 btu. per hour. The equipment weighs about 65 pounds. Space required above the floor is negligible.

If you write maker identify as IEN - 14200

SOLENOID . . Short stroke design for operation in any service position

Source: TROMBETTA SOLENOID CORP.
327-31 N. Milwaukee St., Milwaukee 2, Wis.



Type HA-700

We were wrong when we stated that the company's Type NA-700 solenoid is available only to specification in IEN-10811-52. We should have said that it is a new standard line of short stroke solenoids for the replacement market. Actually the line includes thirty-four sizes ranging from NA-602 to NA-736 inclusive. Each unit is made to match the mounting dimensions and pull characteristics of the solenoid size it is designed to replace.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

If you write maker identify as IEN - 14201

A NEW UNIVERSAL DEVELOPMENT

Grease Fittings with Flush-Type Heads!

Where protruding heads of ordinary grease fittings are vulnerable to a heavy blow or collision, the new Universal Flush-Type Fittings stay put! This new streamlined design developed by Universal provides a smooth surface, which eliminates possible damage to the fittings and to the machine.

The most important feature of Universal Flush-Type Fittings is their exclusive ball-check construction. The seated ball, supported by a strong spring, prevents oil or grease leakage caused by back pressure. Because of special spring design, the ball cannot be unseated.

CROSS SECTION

Providing free flow of lubricant, the back-up spring in the Universal Flush-Type Fittings is designed so passage through it at the point of maximum depression is greater than the opening at the top of the fitting.

Learn more why these newly-developed Flush-Type Fittings belong on your machinery. They come in sizes from ⅛" to 1" threads. Write now for full details on the new Universal Flush-Type Fittings.

UNIVERSAL LUBRICATING SYSTEMS, INC.
785 Allegheny Avenue • Oakmont, Pa.

If you write maker identify as IEN - 14202

New XL BOND FOR CARBIDE TOOL AND CUTTER GRINDING

"XL" is Chicago Wheel's exclusive new bond for silicon carbide vitrified grinding wheels, especially made for grinding carbide cutting tools. Ideal for rough and finish grinding . . . offhand or precision automatic. Supplied in most popular sizes and steel backs. Prompt delivery. Keep your production up . . . costs down, with "XL."

Write today for information—Dept. H

CHICAGO WHEEL & *Mfg. Co.*
1101 West Monroe St., Chicago 7, Illinois
OFFICES IN PRINCIPAL INDUSTRIAL CENTERS

If you write maker identify as IEN - 14203

WRENN PAPER COMPANY

SELECTS B&S SHEAR-CUT SLITTER-REWINDER

The Wrenn Paper Company, widely recognized for its high quality products, was faced with the problem of slitting a hard-to-handle material. Clean, square edges and uniformly wound rolls were of utmost importance.

After considering several machines, the Bagley & Sewall #15 Shear-Cut Slitter-Rewinder was selected.

B & S Slitters and Rewinders are doing outstanding jobs in mills and converting plants all over the country. Their many unique money-saving advantages make them the first choice of the industry. Before you buy, *compare*...and your choice, too, will be B & S Slitting and Rewinding equipment.

For full details write to The Bagley & Sewall Company, Watertown, New York.

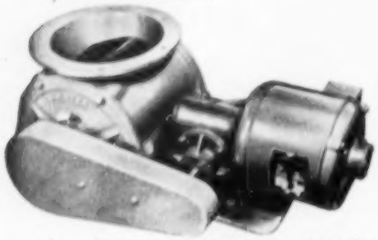
Inserts show Shear-Cut Slitter Units

BAGLEY & SEWALL
designers and builders of
WATERTOWN, NEW YORK
QUALITY MACHINERY SINCE 1893

Foreign Representative: CASTLE & OVERTON, INC., 630 Fifth Ave., New York 20

If you write maker identify as IEN - 14205

PRATER ROTARY AIRLOCK FEEDER



FEEDS powdered and granular products into conveying line—quickly and accurately!

STOPS air leakage at the discharge of dust collectors or other pneumatic equipment!

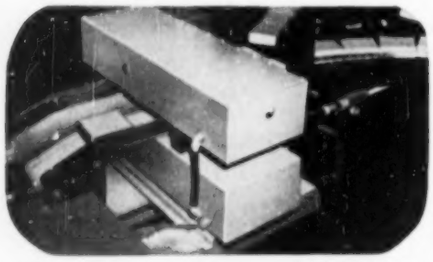
PRE-DETERMINES rate of feeding material into mixers, blenders, hoppers, etc.

RECOMMENDED in the processing of: Ball Clay, China Clay, Diatomaceous Earth, Kaolin, Grains and Feeds, Graphite, Limestone, Whey Powder, Calcium Carbonate, Sulphur, Fullers Earth, Ochre, Volcanic Ash, Bronze Powder, Bauxite, Carbon Black, Salt, Barium Carbonate, Marl, Sugar, Cocoa, Gypsum, Silica, Manganese Sulphate, Phenolic Molding Compound.

Send for new illustrated bulletin

PRATER PRATER PULVERIZER COMPANY
1536 So. 55th Court • Chicago 50, Ill.

If you write maker identify as IEN - 14206



NOW GIVE YOUR PRODUCT

This 4-Way Protection from Stray Metal

1. 100% inspection—RCA Metal Detector finds stray metal that is difficult or impossible to find by other methods. Can be set up to inspect every piece, every batch, every cubic inch of your product at speeds up to 1000 feet per minute.

2. Detection of all metals—RCA Metal Detector finds stray metal of *all kinds*—magnetic or non-magnetic. It ferrets out metal no matter how deeply imbedded—detects tramp metal as small as 0.039 in diameter.

3. Inspection at any stage of manufacture—RCA Metal Detector inspects raw materials, semi-finished products, or finished products—packaged and ready for shipment. Rejects contaminated items automatically or signals for manual rejection.

4. Simple installation, low-cost maintenance—RCA Metal Detector, in most cases, goes in without conveyor-line shutdown. Complete maintenance is available through nation-wide RCA Service Company.

RCA Metal Detector helps protect PLASTICS, DRUGS, RUBBER GOODS, FOOD, TOBACCO, CHEMICAL PRODUCTS, and ORE and LIMESTONE MACHINERY for:

Bakelite Company	The American Tobacco Co.
National Automotive Fibres, Inc.	General Mills, Inc.
Vick Chemical Co.	The Sherwin-Williams Co.
Parke, Davis & Co.	Monsanto Chemical Co.
Goodyear Synthetic Rubber Co.	Aluminum Company of America
The Firestone Tire & Rubber Co.	and many others.

RCA **RADIO CORPORATION of AMERICA**
INDUSTRIAL EQUIPMENT CAMDEN, N. J.

Don't put off this important protection!
MAIL COUPON NOW

Please send me information on the RCA Metal Detector.

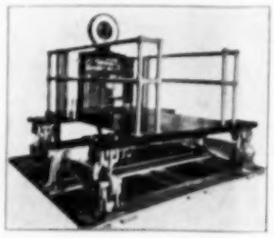
Name_____
Title_____
Company_____
Address_____
City_____ Zone____ State____

Have an engineer call on me.

If you write maker identify as IEN - 14208

WEIGHING . . Platform design automatically adjusts the tare

Source: TOLEDO SCALE CO.
10 Telegraph Road, Toledo 1, Ohio



Section to demonstrate

Illustrated is a demonstration section of the company's recently improved Model-7791 heavy duty dial type platform scale. It is equipped with a seven-lever assembly having maximum capacity of 30 ton per section. Net weight reads on a dial.

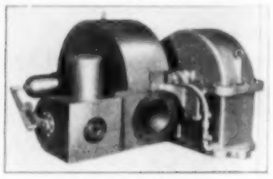
The indicator pointer moves around the dial when a load is placed upon the platform until it reaches maximum dial capacity. At this point, the scale mechanism adds a unit weight and the indicator continues to travel until another unit weight is required or until the total weight figure is reached. The weights disengage themselves when the load is removed from the platform and the scale is ready for the next cycle of operations.

An automatic tare device resets the indicator pointer to zero, making allowances for any accumulation of foreign matter that might have dropped on the platform during the previous weighing operation, in a range from 10 to 20 per cent of the dial capacity. Thus correct net weight is assured at each cycle. The tare operation is push button controlled from a panel located at the right of the scale housing. After this operation is started a pilot light comes on and remains on until the indicator has returned to zero. Various scale ranges are available such as 5 ton maximum by 1-lb. graduations or 25 ton by 5-lb. graduations.

If you write maker identify as IEN - 14209

DRIVE . . Speed reduction gearing for integral or coupled steam turbine

Source: ELLIOTT CO.
49 Kealey St., Jeannette, Pa.



Ask for Bulletin H-19

The company announces a new line of high speed reduction gearing in ratios to 5 to 1 for integral turbine assembly and to 8.5 to 1 for coupled assembly with the turbine. Both designs employ double helical gears with shafts mounted on liner type sleeve bearings equipped with Kingsbury seals and self-contained force feed lubrication.

The turbine and gear case are secured together in the integral assembly. The turbine wheels and reduction pinion are mounted on the same high speed shaft. The reduction gear is a separate self-contained unit in the coupled assemblies. Rating is from 64 to 1,250 hp. on maximum ratio and from 270 to 9,350 hp. on minimum ratio, based on unity service factor and 5,000 rpm. turbine speed.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14210

3 JOBS DONE BETTER with a BALL-LOK CLUTCH

HERE are just three of the many clutch problems Ball-Lok Clutches can solve for you:

- Vari-drive motors and speed reducers—
- Intermittent or hi-rate per hour engagements—
- All hi-speed V-belt drives—

Ball-Lok Clutches have no friction plates, no internal wearing parts. They release instantly—cannot grab. They have a light smooth clutching action on the belt. They increase belt life. Ball-Lok Clutches are compact, light weight, easy to install. They come complete with pulleys from fractional to 10 hp.

Send Your Clutch Problems to Us

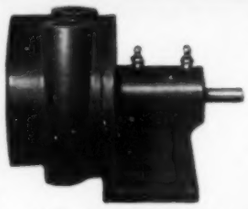
V-Belt Clutch Co.
418 N. WESTERN AVE., LOS ANGELES 4, CALIF.

If you write maker identify as IEN - 14211

"COOL TOOLS WORK BETTER, LONGER"

COOL TOOLS BEST WITH FULFLO

CENTRIFUGAL COOLANT PUMPS



Save wear and tear; cut down production time—do things better and give tools longer life.

- constant pumping action
- spring tension packing
- no bearing in shaft
- carbon seal, if desired
- automatic adjustment

MODEL NOR — Right rotation
MODEL NOL — Left rotation

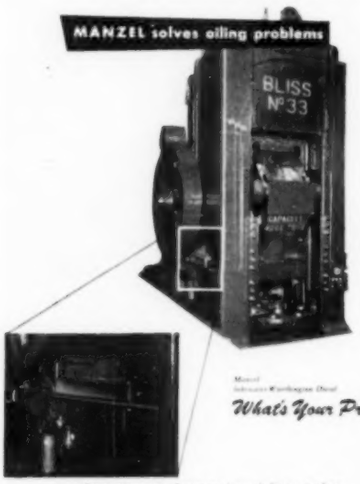
Direct connection: 1600 to 2600 rpm; 8 gal. per min. at 1725 rpm.

Write on your letterhead for professional edition of FULFLO MECHANICAL DATA BOOK

FULFLO THE FULFLO SPECIALTIES CO. Inc.
BLANCHESTER, OHIO

If you write maker identify as IEN - 14212

MANZEL solves oiling problems



What's Your Problem?

Insure many years of economical, trouble-free service from all types of machinery with Manzel Force Feed Lubricators. Adaptable to numerous difficult oiling problems, "Manzel's" can be engineered to your requirements. Experienced representatives throughout the country.

Manzel 243 Babcock Street Buffalo 10, N. Y.

If you write maker identify as IEN - 14213

The Wingfoil Straight-Line Duct Fan is Unexcelled

For Supplying Fresh Air or Exhausting Air containing Paint Spray, Dirt, Steam, Explosive Vapors, etc., in Any Volume or Pressure

It may be used as a roof intake or exhaust, or it may be inserted in a run of duct, occupying no extra space. The motor is located outside the casing, driving the Wingfoil "non-overloading" fan by means of an enclosed V-belt. It is light, compact and easily handled, and may be mounted either horizontally or vertically.

Write for Bulletin F-10

L. J. Wing Mfg. Co. 160 Vreeland Mills Road, Linden, New Jersey

If you write maker identify as IEN - 14214

Machinery, Gas and Diesel Engine Builders . . . ATTENTION!

TITAN-KIRKLAND Combination STUD DRIVER AND PULLER . . .

- incorporates ROLL ACTION to *GRIP* as little as ½" of unthreaded body of stud

- REQUIRES ONLY A SLIGHT LEFT OR RIGHT HAND TURN TO GRIP STUD.
- WHEN ROTATION IS STOPPED, TOOL MAY BE LIFTED OFF STUD WITHOUT REVERSING DIRECTION OF ROTATION.

Made in T-Handle, Ratchet, and Power styles in standard sizes from 3/16" to 1" inclusive. Larger sizes on request.

WRITE FOR FREE LITERATURE, TODAY!

TITAN TOOL CO.
Production Tools
52 MAIN ST., FAIRVIEW, ERIE COUNTY, PA.

If you write maker identify as IEN - 14215

NEW many purpose individual Vulcanaire

DUST COLLECTING UNITS

Use on surface and other grinders where any kind of grinding dust must be removed. Salvage diamond dust.

Inexpensive, compact units, with no moving parts.

Operated from your present air supply.

Installed in a few minutes, eliminating need for costly centrally located dust collecting systems.

The collector element is mounted on the side of the machine. Quickly cleaned, requiring no refills.

Vac-suction pick-up device (vacuum nozzle) is mounted on the grinding wheel guard or close to grinding wheel on other applications. This mounting permits constant contact with dust as the wheel is moved up or down.

A simple needle valve operates the unit, and can be shut off when machine is not in use.

Available in two sizes: 700 series for grinding wheels 7" dia. or less—200 series for wheels 2" dia. or less.

"SALVAGE INDUSTRIAL DIAMONDS FOR DEFENSE"*

*That is the title of the National Production Authority's booklet which describes the growing critical shortage of industrial diamond supplies.

The shortage will soon result in idle machine tools, and lost defense production unless we straightway begin to conserve grinding wheels and salvage diamond dust. The N.P.A. fully and helpfully explains the methods for doing these things.

Request this N.P.A. booklet on your letterhead and Vulcan will be glad to send it to you. You will also receive literature on the versatile Vulcanaire Dust Collector which promotes health in your plant and turns dust into money.

It's made by the makers of Vulcanaire
The jig grinding attachment

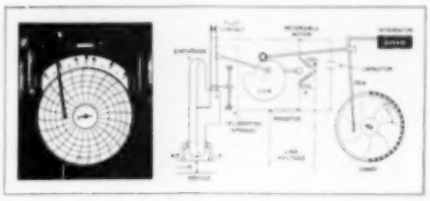
Write for these

Vulcan Tool Co.
734 LORAIN STREET • DAYTON 10, OHIO

If you write maker identify as IEN - 14217

METER . . Differential instrument measures and records flow in pipe line

Source: HAYS CORP.
740-44 E. 8th St., Michigan City 16, Ind.



For furnace control and processing

Diaflow trade names a new differential type diaphragm actuated flowmeter to measure the flow of air or gas through an orifice. A double diaphragm assembly and two pen arms will record the ratio of air to gas flow in a process. The meter will handle static pressure to 10 pounds and differential pressure to 20 in. of water. Assembly is in a rectangular housing measuring 16 by 17 by 7 inches. The circular motor driven chart is 12 in. in diameter. Panel mounting is standard.

Differential pressure, created by the orifice in the pipe line through which flow has to be measured, acts upon the two sides of the diaphragm causing it to react against the force of calibrating springs and come to rest in a balanced position. Resulting position of the pilot contact, carried on the arm of the diaphragm, is the actuating means for a motor control.

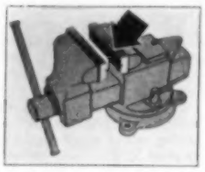
Direct current, at 110 volts, is impressed across the pilot contact and the coils of the pen operation motor. These coils are split to mount a resistor in series with coil A and a capacitor across both coils A and B. The motor rotor positions the follow-up contact through a gear train and lever. It also positions a calibrated cam. A ball bearing roller rides the cam to position the indicator, recorder and integrator by linkage.

Coil A of the motor is energized through the resistor and the motor runs to close the pilot contact whenever it stands in open position. As soon as it is closed, coil B of the motor is also energized to develop power that causes the motor to reverse. This action opens the contact so the motor again reverses. As a result, the floating contact is continually "feeling" for the other contact and, as the motor oscillates slightly, its position is indicative of the differential pressure.

If you write maker identify as IEN - 14218

VISE . . Soft alloy jaws are held in place by permanent magnets

Source: MAGNE-GRIP TOOL CO.
4902 W. Madison St., Chicago 44, Ill.



About $3.50 per pair

Soft metal alloy that will not mar or scratch finished work is employed in the manufacture of this new pair of false jaws for a vise. Built-in permanent magnets hold the jaws in place in a vise in removable assembly. The magnets will not wear out. The jaws can be refaced. Each jaw is grooved vertically and horizontally for work centering. Four sizes are 3 to 4½ in. in ½-in. steps, measured as to jaw width.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14219

CUT COSTS AND CORNERS

BY CORRECTING LOW POWER FACTOR RIGHT AT THE SOURCE OF WASTE

Most inductive electrical equipment installed in a plant wastes money, money that *can be saved*. Some of it goes to supply non-productive magnetizing current. More of it goes to buy extra wiring, switches, and transformers to make up for this loss. Still more is wasted in reduced output through lost load. These wasted dollars can be saved by installing Sprague Power Factor Correction Capacitors at each piece of inductive electrical equipment. Write for free cost-saving guide, "Power Factor Correction" today.

SPRAGUE
Industrial Capacitor Div.
SPRAGUE ELECTRIC COMPANY
165 MARSHALL STREET
NORTH ADAMS, MASS.

If you write maker identify as IEN - 14220

THIS "BLOW HARD" MAKES A QUICK CLEAN-UP

Put a CLEMENTS-CADILLAC blower-suction cleaner into action and presto! — Dirt, Dust, and Grit vanish from every crevice of machinery and equipment. Then you can do some bragging — about this fast, easy, economical way to clean.

Eligible under C. M. P. regulations.

SAVE
TIME · MONEY
PREVENT DAMAGE TO MACHINERY WITH THE . . .

Made in 3 models with attachments for every cleaning job.

PORTABLE COMBINATION BLOWER-SUCTION CLEANER

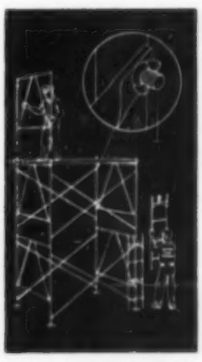
CLEMENTS CADILLAC

CLEMENTS MFG. CO.
6820 S. NARRAGANSETT AVE. CHICAGO 38, ILL.

ASK YOUR MILL SUPPLY DEALER OR WRITE US FOR DATA

If you write maker identify as IEN - 14221

but



SAFWAY
SCAFFOLDING
has 'em all

SAFWAY WING NUT FASTENING IS
√ Simple! √ Positive!
√ Fast! √ Safe!
√ Trouble-Free!

SAFWAY—the original tubular steel scaffolding—is still the fastest, safest and most practical product available. Safway's engineered design and exclusive construction features mean higher profits for contractors. Learn how you can do better work—faster—on jobs of all sizes . . .

Write for Free Bulletin IEN-1252

RENTED and SOLD by distributors everywhere

SAFWAY STEEL PRODUCTS INCORPORATED
6238 West State St.
MILWAUKEE 13, WIS.
Manufacturers of Tubular Steel Scaffolding and Equipment

If you write maker identify as IEN - 14223

HYGRADE WORM GEAR DRIVES

. . . assure smooth, trouble-free operation and better power transmission.

New developments in manufacture provide precision generated gears which give improved performance and greater load-carrying capacity.

Available in horizontal, vertical and Hytop designs. Ratios up to 4108 to 1 or higher when required.

Write for Bulletin HGB

FOOTE BROS. GEAR AND MACHINE CORPORATION
Dept. IEN, 4545 S. Western Blvd. • Chicago 9, Illinois

FOOTE BROS.
Better Power Transmission Through Better Gears

If you write maker identify as IEN - 14224

JOHNSON FLEXIBLE METAL HOSE AND FITTINGS for coolants, lubricants, air

WILL "STAY PUT" WHEN BENT TO ANY POSITION

Five sizes 1/8 to 3/4 in. i.d.
Nine lengths 6 to 36 in. with fittings
Made of oil tempered steel

WRITE FOR FURTHER INFORMATION

JOHNSON METAL HOSE, INC.
P. O. Box 952, Waterbury, Conn.

If you write maker identify as IEN - 14225

THE INTERNATIONAL BOXER

PORTABLE STAPLE MACHINE . . . The "Boxer" is a knockout for stapling corrugated or fibre containers. Lightweight (only 4 lbs., 10 oz.) and small (16x3½x7"), it uses the revolutionary International Retractable Anvil . . . stapling filled cartons from the outside. Close your cartons faster . . . neater . . . with fewer staples per unit area, and at less cost per carton.

Write for bulletin No. 101 on the "Boxer." For large daily volume ask about the large automatic Internationals.

INTERNATIONAL STAPLE & MACHINE CO. 805 E. HERRIN ST. HERRIN • ILLINOIS

If you write maker identify as IEN - 14226

WELDING . . Gas shielded arc torch for machine use, tungsten electrode

Source: LINDE AIR PRODUCTS CO.
30 E. 42nd St., Room 308, New York 17, N. Y.

Minimizes stub loss

Type HW-13 is a new light weight torch in the company's Heliarc line. It employs a tungsten electrode in heavy duty machine welding. The torch mounts on machine carriage that provides correct speed control and directional movement. Water passages inside the torch body cool the body, the welding head and the gas cup. Supply and return are through tubes in the jacket enclosing the power cable. The welding nozzle is replaceable without taking the torch apart. A range of nozzle sizes provides sufficient gas flow for operations requiring 500 amp or less in the welding circuit.

If you write maker identify as IEN - 14227

GAGE . . Micrometer reads to 0.0001 in., chrome finish

Source: GEORGE SCHERR CO.
202 Lafayette St., New York 12, N. Y.

Easy to read

Graduations are clearly defined black lines on a dull chromium surface in this new 1-in. Lustro Chrome micrometer. The vernier reads to 0.0001 inch. Construction includes a lock-nut and ratchet. The anvils are plain or tipped with tungsten carbide as specified. The chrome surface is hard and will not peel. It protects the gage indefinitely from rust and discoloration.

If you write maker identify as IEN - 14228

TESTING . . Neon lamp, prods, and connecting lead to check circuit

Source: IDEAL INDUSTRIES INC.
1006 Park Ave., Sycamore, Ill.

For circuits, fuses, motors

A resistor, immediately back of each of the two prods in this new Test-Glo, characterizes the construction. The resistors reduce voltage in the lead to a safe amount. They are located inside the shoulder-equipped prod handles, one of which contains a neon signal lamp. The lamp will glow on 80 to 600-volt ac or dc, with intensity indicating the relative voltage. The 24-in. lead is insulated for 10,000 volts. The complete unit is sealed, moisture proof and designed for severe duty.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14229

Clean...Dry...Slip-Safe Floors IN JUST 90 SECONDS!

Only HILD has the Shower-feed Brush

Now dirty, slippery factory floors can be scrubbed during working hours...*without interrupting work routines for more than 90 seconds!* HILD Shower-feed Scrubbing speedily loosens stubborn grease and slippery oil accumulations. The HILD Vacuum then *instantly* and *completely* suctions up dirty scrub-soap solution. Floors are left clean, dry and *slip-safe*...without rinsing or mopping. HILD Equipment is designed to reach the danger spots under and around machines.

Write today for FREE 24 PAGE BOOK!

HILD FLOOR MACHINE COMPANY
740 W. Washington Blvd., Dept. IEN-12 Chicago 6, ILL.

1927-1952 HILD System MAINTENANCE EQUIPMENT & SUPPLIES OUR 25TH YEAR

If you write maker identify as IEN - 14230

WON'T SMUDGE • RESISTS: DIRT GREASE WATER ACIDS

LABELON PLASTIC TAPE

Write on it

STICKS WITHOUT MOISTENING

FOR LAB, STOCKROOM, SHOP, OFFICE, ETC.

Nothing else like LABELON—the amazing "Write on it" plastic tape! Use it to label stockroom shelves, bins, tools, hard-to-mark parts; for indicating rejects and service department repairs; for marking laboratory equipment, supplies, experiments; for panel boards or wiring; for office files, folders, etc.

LABELON TAPE sticks without moistening to any smooth, clean surface—yet can be quickly removed. Resists heat up to 160°. Just write on it with pencil or stylus—message won't smudge. Choice of widths and colors. Handy dispenser with cutter bar.

Write to Dept. IE

See your nearest dealer, or write for sample and prices.

LABELON TAPE CO., INC.
450 Atlantic Ave., Rochester 5, N. Y.

If you write maker identify as IEN - 14231

HERON ELECTRIC HEATER RELEASES WAX, PITCH, GREASE FROM SUPPLIER'S DRUMS

Lowers over drum

FAST
Empties 400-lb. drum of Bitumen within 7 minutes

CLEAN
Thermostat control
Electrical operation — No flame, smoke, soot

SAFE
Metal-sheathed heating element operates below black heat — safe for flammable materials

User specifies drum size, material and voltage

Any Type of A.C. or D.C. supply systems

Ask for detail literature

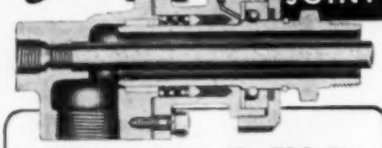
Certain U. S. sales territories still open

HERON HEATING DEVICES LTD.
29 Oxford St., Newcastle upon Tyne 1, England

If you write maker identify as IEN - 14232

UP TO 50% *Power Savings*

The Improved BARCO REVOLVING JOINT



HERE is Barco's new, *improved* Type IBR Revolving Joint for supplying steam, water, oil, or other fluids to rolls, dryers, drums.

LOW TORQUE! Inherent low torque little affected by pressure, speed or temperature—thanks to special ball bearing used in combination with self-lubricating graphite-carbon bearing and new low torque long-life chevron packing.

LEAKPROOF AND LONG LIFE! Note wide spacing between bearings. Insures close alignment and long life for self-adjusting, self-sealing chevron packing.

EASY SERVICING! Internal parts readily accessible—usually without removing joint from roll. Sizes ½" to 2". Single flow or syphon styles. Steam: 150 p.s.i., 450°F., 500 RPM. Hydraulic: 200 p.s.i., 750 RPM.

Send for new Bulletin 300

BARCO MANUFACTURING CO.
1838N Winnemac Avenue • Chicago 40, Illinois

If you write maker identify as IEN - 14233

NEW Automatic Transveyor

This new Automatic Electric Truck is the answer to industry's need for a more compact, low cost Stacker. It is engineered to maneuver in six foot aisles and where floors and elevators have limited capacity.

Expressly designed for...

- Greater storage space
- Narrow aisles
- High-stacking
- Maneuvering in close quarters
- Limited capacity floors and elevators
- Economy and long-life

EXCLUSIVE BALANCED ACTION

The Transveyor has two exclusive features that insure better performance, longer life. **1.** The center-pivot design compensates for irregular floor surface thus eliminating frame distortion and uneven load distribution. **2.** Drive and idler wheels are tie rod connected. This wheel alignment prevents costly, scrubbing action that results in excessive tire wear to non-drive wheel.

Transveyor STACKER A PRODUCT OF AUTOMATIC

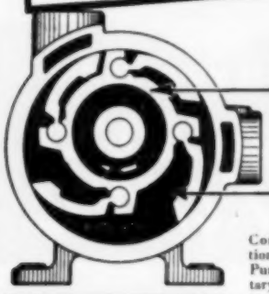
Write today for full details

Automatic® Registered Trade Mark

180 W. 87th Street, Dept. X-2, Chicago 20, Ill.

If you write maker identify as IEN - 14234

LEIMAN AIR PUMPS GIVE YOU Greater Capacity!



SMALLER PISTONS *provide* LARGER AIR SPACE

HINGED WINGS *take up their own wear*

Compare this cross-section of a Leiman Air Pump with any other rotary air pump. It is the working air space that counts—and Leiman provides 2 to 3 times more area, per size and weight of pump.

Handle air pressure, vacuum or suction jobs with much smaller Leiman Rotary Air Pumps. You save weight and space—run at lower r.p.m.—have fewer moving parts—no springs, gaskets or packing—no tips to renew—nothing to give trouble. Leiman patented leak-proof hinged wings maintain fully-rated pressure or vacuum for years and years.

What is your air application?

Send us details. Leiman engineers offer over 60 years' experience with thousands of air applications.

Catalog and Application Data sent on request

For Pumps—write DEPT. A

LEIMAN *Rotary* **AIR PUMPS** (Pressure—Vacuum)

Metal Cleaning and Finishing

without acids or scratch brushes

Fast, low-cost, safe, uniform!

LEIMAN SANDBLASTS

Clean up scaly, rusty, rough surfaces—prepare better surface for plating, enameling or painting—stencil letters and designs—more rapid matte or satin finishes. Use unskilled help. Many models, treadle or automatic.

For Sandblasts—write DEPT. B

LEIMAN BROS., Inc. 166 Christie Street Newark 3, N. J.

AIR PUMPS - AIR MOTORS - SAND BLASTS - DUST COLLECTORS

If you write maker identify as IEN - 14236

LAPPING . . Sixty inch machine finishes large soft metal work pieces

Source: NORTON CO.
36 New Bond St., Worcester 6, Mass.

Lapping time about 1 minute

Bright surfaces that require no subsequent polishing are produced by this new 60-in. machine. Accuracy is sufficiently high to seal without a gasket. The finish is excellent for bearing surfaces or those to be subsequently drilled or milled. There is no trace of embedded abrasive.

The machine is shown to the left in the illustration with its overhead arm removed and with three large work pieces in place in Formica insert work holders. The holders ride upon the laps and are rotated by ring gears mounted on them and meshing with a center gear on the machine. Work of this size does not require any holddown pressure.

The overarm assemblies, shown to the right in the illustration, carry three pressure plates above the work positions when smaller work is being handled. This arm remains normally a part of the machine. It is swung to the left to clear the lap when it is not required.

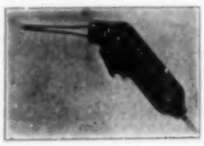
The laps are trued by application of a diamond on a swing arm secured to the side of the machine column. It is shown in trueing position to the right in the illustration where it rides after removal of one of the Formica holders and its geared ring. Mineral oil, initially treated with Hyflow Super-Cel filter-aid powder, is the coolant employed in lapping.

Coolant is circulated by means of motor driven pumps from a tank at the rear of the machine. Machine drive is by a motor equipped with a Mercury clutch for smooth starting. The machine will coast when no work is in position but it will come quickly to rest, without braking, when the holders are full. Operation is controlled by an adjustable timer that can be set for the desired interval.

If you write maker identify as IEN - 14237

SOLDERING . . Electric iron applies heat at copper wire loop tip

Source: PAUL C. ROCHE CO.
11 Park Place, Dept. N, New York 7, N. Y.



Made in Germany

The tip of this new Primax soldering iron comes up to heat within 6 sec. of the time a plunger is depressed in the handle. The plunger action closes the circuit to a transformer that provides high initial current to minimize the heating interval. The iron weighs 22 ounces. Its alloy tip does not require retinning and will last indefinitely in normal service. Operation can be specified on 110 or 220-volt ac. Input rating of the new tool is 60 watts.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 88

If you write maker identify as IEN - 14238

WATSON-STILLMAN HYDRAULIC POWER TOOLS

HYDRAULIC JACKS

These sturdy units, with either independent or integral pumps, are useful for many jobs in construction and maintenance. Capacities from 20 to 500 tons.

HAND PUMPS

Single and double plunger types, with reservoirs of different capacities to suit the job, these hand pumps have a wide application for operating small hydraulic tools, jacks and other hydraulic equipment, and for general hydrostatic testing purposes.

PORTABLE PIPE BENDERS

Bends all standard, extra heavy and double extra heavy steel pipe from 3/8 in. to 2 in. inclusive, as well as standard weight pipe up to 3 in. diameter. Also handles solid mild steel bars up to 2 in. diameter.

WIRE ROPE SHEARS

W-S wire, cable and bar shears provide years of trouble-free general service. They are light and portable for convenient on-the-job use.

Write for Bulletin A-5

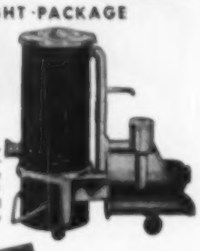
P-M-84

WATSON-STILLMAN FITTINGS DIVISION
H. K. PORTER COMPANY, INC.
ROSELLE, NEW JERSEY

If you write maker identify as IEN - 14239

HEAVY DUTY POWER IN A LIGHTWEIGHT PACKAGE

WITH SPENCER PORTABLE VACUUM CLEANERS



For heavy duty general cleaning, offices, hallways, laboratories, conference rooms, etc. . . . wet pick-up . . . dry mop cleaning . . . 3 models (1/2, 3/4 and 1 H. P.), sturdily built for long, hard service. (Larger machines available for plant use.)

WRITE DEPT. 1E FOR DETAILS

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT

SPENCER HARTFORD

1SP5SR

If you write maker identify as IEN - 14240

How to Build Your Own Overhead Conveyor

This 20-page booklet tells you in detail how to layout your overhead monorail, power conveyor, select all the parts needed and erect it in your plant. All elements are fully illustrated with sizes and capacities given.

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Mechanical Handling *Systems, Inc.*

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In Canada: Canadian Mechanical Handling Systems, Ltd.

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TRAFFIC NEVER STOPS

when you repair your floors with

PERMA*Mix*

THE ALL-TEMPERATURE PATCH — SETS INSTANTLY

3 EASY STEPS TO FOLLOW:

- **Clean area to be patched. Apply primer supplied in drum. Prime about 2" outside of patch.**
- **Fill area with PERMAMIX, just as it comes from the package, allowing sufficient material for slight crown. Permamix feather edges.**
- **Tamp solidly in place and resume traffic immediately.**

No mixing, waiting or production delays when you repair your floors the easy, fast PERMAMIX way. Comes in handy, durable 50 lb. net weight fibre drums.

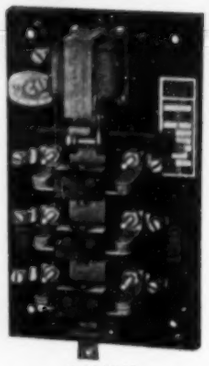
PERMAMIX WILL NOT FREEZE. Will not "set" in drum. Can be stored indefinitely in any temperature. Write for booklet.

PERMAMIX CORPORATION
230 N. LaSalle St. • Chicago 1, Illinois

If you write maker identify as IEN - 14242

NEW ZENITH MAGNETIC SOLENOID CONTACTORS

★ SOLENOID OPERATED
★ FINE SILVER CONTACTS
★ SIMPLIFIED WIRING



TYPE SC 33

This ZENITH contactor is built to withstand the severe service demanded by loads based on Type-C lamps.

It is designed on the straight-line principle, with the solenoid being connected directly to the contact bar.

The advantage of this method of construction is its easy access to any part for quick inspection or service, without disturbing other parts.

Models: Size 1 — 25 amps. Size 2 — 50 amps.

Either size can be supplied in any number of poles.

SEND FOR FREE CATALOG

This big, illustrated catalog contains all the newest items in automatic control equipment made by Zenith! Write now for your Copy!

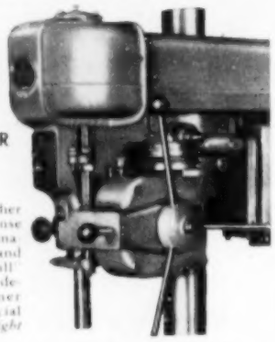
ZENITH ELECTRIC CO.
146 W. WALTON ST., CHICAGO 10, ILLINOIS

If you write maker identify as IEN - 14243

It's no accident that they're known as

LIGHT-HEAVYWEIGHT

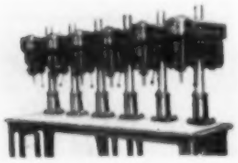
DRILL PRESSES



It was done by design — WALKER-TURNER Design

For jobs where neither the capacity nor expense of a heavy industrial machine is warranted, and where a "hobby drill" would be wholly inadequate, Walker-Turner has engineered a special class of *light-heavyweight* Drill Presses.

Professional in design and operation, yet light for production machines, this "in-between" line gives industry the needed capacity for short-run production work, without the necessity of heavy investment. Walker-Turner makes 15" and 20" Drill Presses (in Bench, Floor, and Production Models), as well as Radial Drills. For complete information, use margin below to write your name and address.



VERSATILE LIGHT-HEAVYWEIGHT 20" Walker-Turner Drill Press Multi-Spindle Model

Designed for industrial users where production rate and initial cost are primary factors in the selection of equipment, Walker-Turner 20" Drill Presses operate continuously and accurately at any rate of speed from 400 to 2600 r.p.m. Multiple spindle models (2 to any desired number) are particularly effective in increasing production on many jobs where a series of holes are to be drilled, tapped, reamed or counterbored in a single piece.

WALKER-TURNER
Walker-Turner
KEARNEY & TRECKER CORPORATION
PLAINFIELD, N. J.

SOLD ONLY THROUGH TRAINED INDUSTRIAL DISTRIBUTORS

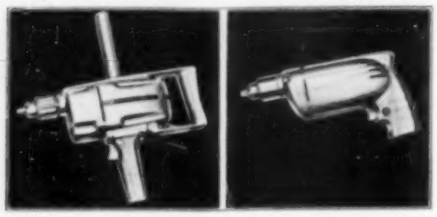
DRILL PRESSES • RADIAL DRILLS • TILTING ARBOR SAWS • BELT and DISC SURFACERS
METAL-CUTTING BAND SAWS • LATHES • SPINDLE SHAPERS • JOINTERS

USE THIS SPACE
to write for full details and specifications
Walker-Turner Division, Kearney & Trecker Corp.
Dept. IE-12, Plainfield, N. J.
(Please write your name and address in margin of page)

If you write maker identify as IEN - 14245

DRILLING . . Portable electric tool, ¾ to ½ in. sizes for production

Source: PORTABLE ELECTRIC TOOLS INC.
318-22 W. 83rd St., Chicago 20, Ill.



Detail specifications upon request

Superduty trade names a new line of portable electric tools in ¼, ⅜ and ½-in. sizes with speeds ranging from 500 to 5,000 rpm. at no load. The line includes 54 types and sizes. Drive is by a universal motor with its armature mounted in ball bearings. Transmission is through heat treated gears enclosed in a grease tight housing. Control centers at a two-pole lock type trigger switch. A fan on the armature shaft maintains ventilation through the die cast aluminum housing. Operation can be specified on 110 or 220-volt input.

If you write maker identify as IEN - 14246

FASTENING . . Sliderless zipper, made of plastic, flange lifts to open

Source: FLEXIGRIP INC.
104 E. 61st St., 1st Floor, New York 21, N. Y.

Ask for sample

New design has been added to the company's plastic slide fastener, previously described IEN-5940-52. The previous slide fitting has been eliminated from the new unit which can be sealed by finger pressure to engage the two interlocking lips and released by lifting the flange which is an integral part of the fingers.

Application is primarily on flat plastic articles to which the fastening can be sealed by electronic heating equipment. In closed position a container can be made air tight, dust proof and water proof. The connection will withstand a pull of about 20 lb. without separating. The tape form in which the fastening is supplied is wound on 500-ft. reels or is cut to specified length. List price is 5.4 cents per foot.

Identify as IEN - 14247

An X-Ray machine manufacturer has doubled the capacity of his equipment, at no increase in weight, by employing Armco Steel Corporation's Tran-Cor 3X-O electrical steel in the machine's transformer core. The Armco steel replaces a previous hot-rolled Type M-14 steel. The company has published a new booklet on it, "Armco Oriented Electrical Steels."

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14248

USE ACME ELECTRIC DRY-TYPE TRANSFORMERS TO

- ELIMINATE DOUBLE WIRING
- DISTRIBUTE POWER AT HIGH VOLTAGE
- PROVIDE 3 WIRE SECONDARY CIRCUITS
- OPERATE 120 VOLT EQUIPMENT FROM POWER CIRCUITS
- BOOST VOLTAGE
- BALANCE VOLTAGE
- INSULATE CIRCUITS

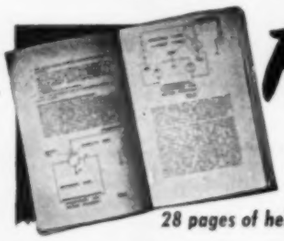
Available in sizes 1/10 to 167 KVA, 1 phase 60 cycle; 9 KVA to 500 KVA 3 phase 60 cycle. Class "A" and Class "B" insulation.

Write for Catalogs

ACME ELECTRIC CORPORATION
2612 WATER STREET • CUBA, N. Y.

Acme Electric
TRANSFORMERS

If you write maker identify as IEN - 14249



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FROM WESTERN PRECIPITATION

28 pages of helpful facts about

COTTRELL ELECTRICAL PRECIPITATORS

THIS HELPFUL 28 PAGE BOOKLET — Prepared by Western Precipitation Corporation, pioneers in the commercial application of COTTRELL Precipitators — summarizes and illustrates many of the basic facts you should know about COTTRELL Precipitators for use in recovering industrial dusts, mists, fogs, fumes, fly ash and other suspensions from gases. Written particularly to answer questions of design engineers, plant engineers and others interested in COTTRELL Precipitators, this booklet outlines the various types available, how they operate, principal types of electrical systems and rectifiers, shell construction, other helpful data.

As long as the supply lasts, a free copy will be sent on request to our nearest office. Write for Bulletin No. C-103 today!

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Main Offices: 1011 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
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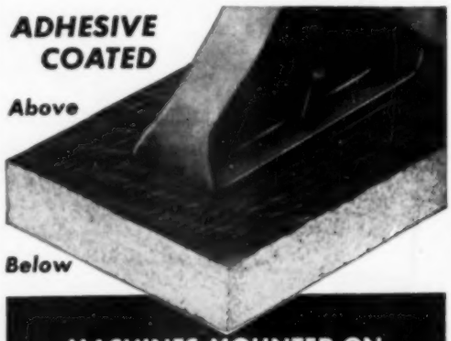
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

If you write maker identify as IEN - 14250

ADHESIVE COATED



Above

Below

MACHINES MOUNTED ON Westsorb CAN'T CRAWL

Westsorb *adhesive-coated* machine mounts are solving more than the problem of vibration. Their (exclusive) adhesive coating on both sides prevents looms and all other machinery from "crawling." Eliminates realignment after installation. This minimizes down time—saves money. Westsorb adhesive-coated felt mountings don't break down under heaviest service impacts. They resist oil, acid, grease, water and age. They are simpler to install than any machine pad. No holes or bolts—no adhesive to apply. Western Felt engineers located throughout the textile areas are anxious to cooperate.

WESTSORB
Vibration-absorbing Machine Mounts

• Quickly installed • No holes to drill • No adhesive to apply
Low "down-time" • Saves floors • Less machine repair • Reduce plant noise • Thickness for every need • Engineered for every job

WESTERN Felt WORKS
4035-4117 Ogden Ave.
Chicago 23, Illinois
Branches in all Principal Cities
MANUFACTURERS AND CUTTERS OF WOOL FELTS

GET THIS DATA

Western Felt Works
4035-4117 Ogden Ave., Chicago 23, Illinois
Please send 18-page booklet containing data on efficiency tests of Westsorb machine mounts under looms and other equipment.

Company .....
Address .....
Individual ..... *Title* .....

If you write maker identify as IEN - 14252

Have YOU a HEATING Headache?

The Production Manager for a prominent manufacturer of Aspirin Tablets got rid of his by equipping the company's Conveyor Type Drying Machinery with TRENT Patented

"Folded-and-Formed" Heating Elements
Long Life Guarantee!

This installation is typical of the wide variety of applications for these efficient, economical electric heating elements . . . in Custombuilt or Standard Racks.

Write for complete information on "Folded-and-Formed" Heating Elements, or send details of your application.

TRENT INC
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE. PHILA 27 PA

If you write maker identify as IEN - 14253

LOOK JOE !... Make These Cuts with a CLIPPER...Let's Stop "DOWN-TIME" Delays!

Any **SPECIAL SHAPES**
SKEWS, SPLITS, ANGLES, SOAPS

CUT IN SECONDS WITH A ***DUSTLESS...*** **CLIPPER MASONRY SAW**

NINE MODELS PRICED FROM $265

PERFECTLY SMOOTH CUTS ELIMINATE HIDDEN FRACTURES, EXCESS MORTAR & DOWN-TIME

Speed REPAIR or CONSTRUCTION of your Furnaces, Kilns and Boilers by using a CLIPPER MASONRY SAW

DUSTLESS... **MASONRY CUTTING**

With the MODEL HD CLIPPER you can choose your cutting method...cut DUSTLESS (wet) in confined areas or DRY when DUST is not a problem. Remember too, there are NINE Clipper Models designed to perform with smooth simplicity and flexibility.

Free Trial

The outstanding policy of FREE TRIAL has been in effect since Clipper invented the world's first masonry saw. Only thru this CLIPPER FREE TRIAL are you guaranteed . . . ACTUAL TEST ON THE JOB . . . FULL SATISFACTION . . . NO OBLIGATION!

PATENTED CLIPPER FEATURES

AUTOMATIC BLADE PRESSURE Makes your blades last longer. Because Equalizer Spring Automatically cushions blade pressure whether cutting HARD or SOFT materials, gives greater blade economy.

SELECT-A-NOTCH One man easily adjusts Cutting Head to desired height whether cutting 12" or 1" material. Operator's hands merely guide. Weight supported by rear bar.

SAVE-A-BLADE DIAL Just turn the Save-A-Blade Dial to the material hardness and the pressure Equalizer Spring automatically sets the tension—guarantees faster cutting and longer blade life.

Clipper

FOR CUTTING CONCRETE—ASPHALT
BUILDING FLOORS—STREETS—WALKS
CLIPPER CONCRETE SAWS...
5 MODELS—GAS OR ELECTRIC POWER

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KANSAS CITY 8, MISSOURI
Cable Address: Clipper KC Mo.

PITTSBURGH PHILADELPHIA
ST. LOUIS SAN FRANCISCO
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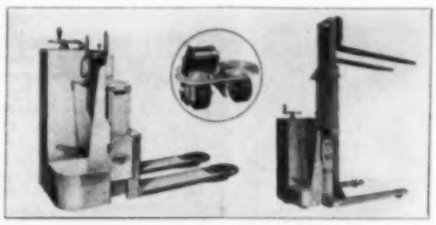
33 E. 28th St. • Kansas City 8, Mo.
Send FREE information and literature on:
☐ NEW CLIPPER MASONRY SAWS ☐ CLIPPER CONCRETE SAW
☐ DUSTLESS Model HD ☐ FREE TRIAL
IT-142
NAME _____
ADDRESS _____
CITY _____ STATE _____

If you write maker identify as IEN - 14255

TRUCK . . Pallet and fork lift for close quarter handling and stacking

Source: AUTOMATIC TRANSPORTATION CO.
149 W. 87th St., Chicago 20, Ill.



Illustrated specifications upon request

Transveyor trade names a new line of motor operated pallet and fork lift trucks. The forward load carrying wheels ride beneath the front of the load or straddle it at the front to minimize overall length of truck and load for operation in close quarters.

The pallet truck is available in 2,500-lb. capacity. The fork truck is in the same rating and also in a 4,000-lb. assembly. Both will take pallets measuring to 48 in. in length for operation in 6½-ft. aisles based on pallet width of 48 inches.

The travel motor is mounted above and chain connected to the travel drive wheel. It is assembled in a plate with a twin idler wheel. Both rotate about their own centers for steering and are tied together as in a motor vehicle to turn in unison. At the same time the mounting plate is pivoted horizontally along the axis of the truck so the two wheels can tilt in relation to the main frame for travel over uneven floor surfaces. The arrangement provides three point suspension for the load in relation to the front wheels under all conditions.

The operator rides on a platform beside the drive motor. He steers with his left hand and controls the brake and first motor speed with his foot. A separate motor operates the hydraulic equipment for load lifting and lowering. Power is taken from a battery in front of the operator's position. Two lift heights are to 102½ and 132½ in. above the floor. Both trucks operate at three speeds forward and reverse.

If you write maker identify as IEN - 14256

SEALING . . Synthetic O-rings made of Teflon, Nylon, polyethylene

Source: W. S. SHAMBAN & CO.
5745-49 Marilyn Ave., Dept. E, Culver City, Calif.

They excel rubber

Three new series of synthetic O-rings have been added to the company's lines for applications requiring chemical inertness, ability to stand up in contact with oil, acids, bases, solvents and to remain serviceable in temperature range between minus 110 and plus 500 deg. F. Sizes correspond to AN-6227, AN-6232 and AN-6230 measuring approximately ¾ to 12 in. in outside diameter.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14257

C.H.F. **Sectional Tables WITH SWING SEATS**

MAXIMUM SEATING IN ANY SIZE SPACE

For Recreation Rooms . . . Factory Work Tables

Available in units to seat 4 to 24 people. "CHF" Sectional Tables may be purchased in varying lengths to meet your exact requirements. Seats swing completely under table out of the way to give you full aisle space. Your choice of seats . . . with or without backs . . . cast iron frame construction in a variety of colors. "CHF" Sectional tables are standard equipment for schools, factories, clubs, churches and all types of institutions.

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THE CHICAGO HARDWARE FOUNDRY CO.
"Dependable Since 1897"
34122 Commonwealth Avenue
NORTH CHICAGO • ILLINOIS

If you write maker identify as IEN - 14258

FASTER! with HANSEN

— the **TACKER** *it Pays to Use!*

SAVES **TIME!** Wherever tacking and fastening are done — in assembly, production, shipping — Hansen speeds up operations, cuts costs and saves time. Balanced design—unique Take-up Jaw—for easier operation—quicker service.

STEPS! Hansen is self-contained, loaded, ready for instant, continual use. Holds scores of staples. Reloads quickly. Easily portable. Take it to the job! Hansen Vest-Kit saves back-tracking for refills.

MATERIALS! Accurate, precision driving—staples placed and driven exactly where you want them—no marring of surface — no wastage.

36 DIFFERENT MODELS
80 STAPLE SIZES

REQUEST BOOKLET

A.L. HANSEN MFG. CO.
5051 RAVENSWOOD AVE. CHICAGO 40 ILLINOIS

If you write maker identify as IEN - 14259

You'll be amazed at the *new cost-cutting efficiency* that a De Walt brings to your boxing and crating operations!

It cross-cuts and rips with amazing speed and accuracy —enables you to turn out large quantities of precision-made boxes and crates in record-breaking time!

And there's less waste material when you use a De Walt—another factor that helps to cut costs.

Investigate this source of potential higher profits today! Send for catalog to De Walt Inc., Dept. E-12, Lancaster, Pa.

De Walt Inc. Lancaster, Pa.

DeWALT
POWER SAWS

Subsidiary of AMERICAN MACHINE AND FOUNDRY COMPANY, New York

If you write maker identify as IEN - 14260

UNBRAKO SOCKET SCREW KEYS

UNBRAKO Hex Keys were developed to utilize to the maximum the quality built into UNBRAKO Socket Screws. They are interchangeable for various types of screws and suitable for use with all standard makes of socket screws. UNBRAKO Key Fold No. 1 is a plastic case with seven keys for socket set screws from #8 to ¼" diameter, socket cap screws from #4 to 5/16" diameter, flat head cap screws from #6 to 5/16" diameter, as well as a number of shoulder screws and pressure plugs. Write for descriptive literature. STANDARD PRESSED STEEL CO., Jenkintown 14, Penna.

UNBRAKO SOCKET SCREW DIVISION **SPS** JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 14261

GARLOCK Service-Tested LEATHER PACKINGS

Available in ALL SHAPES, ALL SIZES ALL TANNAGES and ALL TREATMENTS

SHAPES — Molded Cups, "U" Packings, "V" Packings, Washers, Gaskets, Discs, Flange or Hat Packings

SIZES — All sizes suitable for leather packing applications from ½" O. D. to 99" O. D.

TANNAGES — Oak, Chrome, BITAN*

TREATMENTS — Oil, grease, or wax treated; Synthetic rubber impregnated; with fabric liners; untreated

Write for leather packing folder today!

*Registered Trademark

THE GARLOCK PACKING CO.
PALMYRA, NEW YORK
In Canada: The Garlock Packing Company of Canada Ltd., Toronto, Ont.

GARLOCK

If you write maker identify as IEN - 14262

where ELSE can you use PRINT-AD-STRING

Reg. U. S. Pat. Off.

the "TIE that TALKS"?

Tie up your products with Print Ad String, and wherever they go they tell people your name or slogan, they give directions, they measure footage, they provide grade markings—they tell whatever you want told . . . and tell it in a novel, colorful way.

Here's a tremendously strong COTTON tie—in thicknesses down to .003, widths down to ⅛", in any color or combination of colors you want—a tie that won't mar or dent the edges of articles tied in it—won't slip in the knot—won't stretch—and adds a smart touch to your package.

Mighty useful for manufacturing short-cuts, too. Be informed! Mail coupon now for FREE booklet full of valuable ideas!

BETTER TYING

Holds parts firmly for assembly, cutting, drilling . . . Holds parts in finished assemblies . . . Measures running footage . . . Gives directions, grade marks, identifications.

BIG HELP IN THE PLANT

Good-looking all cotton ties! . . . Flat, won't mar or dent edges of boxes or merchandise . . . Won't slip in the knot . . . Non-stretch, great strength . . . Also used as rip-cord opener, from candy bars to survival kits . . . Ties anything!

MAIL FOR FREE IDEA BOOK!

Dept. B—Chicago Printed String Co.
2302 Logan Blvd., Chicago 47, Ill.

GENTLEMEN: Without cost or obligation send me your FREE Idea Book.

My Name _____
Title _____
Company _____
Address _____
City _____ State _____

If you write maker identify as IEN - 14264

WATER TREATING . . Still and tank for central supply, rates 10 gph.

Source: BARNSTEAD STILL & STERILIZER CO.
48-52 Lanesville Terrace, Boston 31, Mass.

Automatic operation

New assembly of the company's Type-Q pyrogen-removing water still and a 12-gal. Pyrex tank provides a central supply for pure water. The equipment is designed for wall mounting and can be specified with steam or electric heat. The steam heated unit is shown in the illustration.

Union connections can be loosened quickly to assist in installation and cleaning. A clamp type valve applies at the bottom of the tank which rides in a cushioned wall bracket. The unit is suited particularly for use in laboratories, first aid departments, hospitals.

If you write maker identify as IEN - 14265

FEEDING . . Electric vibrating unit advances work pieces on circular path

Source: SYNTRON CO.
410 Lexington Ave., Homer City, Pa.

Around, up and out

Type EB-00 is a new small unit that has been added to the company's line of electrical vibrating feeders, previously described IEN-9855-48. The new unit reduces minimum part size from a previous 1¼ in. in length by ¼ in. in diameter to ½ in. in length by 1/16 in. in diameter. Overall dimensions are 5 by 5 by 7 in. for the feeder unit which is separate from the vibrating control.

Small work pieces, filled into the circular bowl, are moved outward radially by the vibrating action to align themselves in a spiral path leading upward on the inside surface of the bowl to a point of discharge near the top. Their speed along the path can be regulated by adjusting the vibrating control. Pieces that do not fall correctly into the spiral path will be returned by gravity to the bowl supply so only those that are correctly positioned will be fed from the outlet point.

Identify as IEN - 14266

Two sand containers, two lever operated valves and spouts for the sand mount in the rear of your automobile. You put your foot on a pedal to release the sand ahead of the rear wheels when you come to a slippery spot or a curve. You supply the sand, being certain it is dry. Connecticut Telephone and Electric Corporation supplies the equipment.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14267

DUST REMOVAL costs less with DUSTUBE

HERE'S WHY

- Dustube Collectors control dust and fume with virutally 100% efficiency.
- Operating and maintenance costs are unusually low due to a unique simplicity of operation.
- Material is collected in a dry state and can be re-used without thickening, filtering or drying.
- Power costs are low.

WRITE TODAY FOR CATALOG 72-B

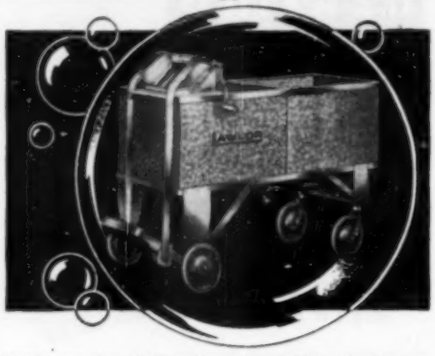
American WHEELABRATOR & EQUIPMENT CORP.
507 S. Byrkit St., Mishawaka, Ind.

dustube COLLECTORS

If you write maker identify as IEN - 14268

LAWLOR MOPPING TANKS

Lead the Field in Ruggedness and Service



8 styles and sizes of all steel, acetylene welded tanks • 2 or 3 compartments • 30, 60 or 65 gallon capacities • hand or foot pressure wringers • perforated roll wringers • special drain shut-offs • hot dipped, galvanized chassis and frames • rubber tired, cadmium plated steel wheels.

Write for Catalog of Mopping Tanks, Wringers, Floor Scrubs Wax-Polishing Machines for every kind and size floor

Quality Floor Equipment for 50 Years

S. C. LAWLOR CO. 120 North Aberdeen Street Chicago 7 • Illinois

If you write maker identify as IEN - 14269

HERE'S New Economy FOR HANDLING BULK MATERIALS . . . COMPONENT PARTS . . . SCRAP

PHILLIPS Junior Dump Units

Made in capacities of one-half and one cubic yard for fork lift truck use . . . these units are simple in design, easy to handle, sturdy enough to withstand years of the most severe service. They were designed specifically to satisfy industry's need for a more economical, lighter weight, more versatile self-dumping unit.

Among the outstanding features are: a newly-designed pallet-type base to permit the utmost in economy . . . a safety Phil-Lock which guards against accidental dumping.

TWO SIZES AVAILABLE: Model JF-½, with hopper capacity of one-half cubic yard or 1200 lbs.; *Model JF-1*, one cubic yard or 1500 lbs.

Write for Bulletin E-48.

MANUFACTURERS SINCE 1863 PHILLIPS MINE AND MILL SUPPLY COMPANY PITTSBURGH, PA.

MATERIALS HANDLING EQUIPMENT

2500 JANE STREET · PITTSBURGH 3, PA.

If you write maker identify as IEN - 14271

Tap and insert in one operation with TAP-LOK INSERTS*

THE Tap-Lok Insert offers an effective, low-cost method of preventing stripping of tapped threads in softer-than-steel materials. It is a steel or brass bushing threaded internally and externally, and provides a hard, long-wearing thread surface.

Slotted segments at one end of the insert enable it to tap its own thread as it is turned into a cored or drilled hole equal in size to a tap drill hole for its external thread. This self-tapping feature eliminates the separate tapping operation required by other types of bushings, saving much time and labor.

The insert retains its seat firmly against vibration and affords maximum torque-and-pull resistance. Widely used as original equipment, the Tap-Lok Insert is ideal also for salvage and repair of stripped threads.

Send for descriptive folder.

•

Also manufacturers of Groov-Pins for positive locking press fit.

*Reg. U.S. Pat. Off.

GROOV-PIN CORPORATION

1127 Hendricks Causeway, Ridgefield, N. J.

If you write maker identify as IEN - 14272

FAR LESS TIP BREAKAGE with "RING SEAT" CENTER DRILLS

Link Industries specializes in drills of the center-drill type only.

We make them on specially designed machines to assure consistently close tolerances.

We make them in three styles, each to meet a specific condition.

The "R" Type For Precision Parts

These curving contour Ring-Seat Center Drills give you a stable, accurate, burnished-band precision center.

After heat-treat this bearing surface is quickly restored by lapping—in less than half the time required for conventional centers.

The "R" center is automatically a protected center.

The "S" Type For Heavier Work

This Ring-Seat Drill produces a center with a pre-formed 60 degree band for heavy duty work.

Beyond this 60 degree bearing surface the center produced flares out at 82 degrees, so that it is a safety center. After heat-treat the bearing surface is readily lapped out.

With its 82 degree flare, this "S" Type Drill has added utility. It is a rugged, one-operation tool for drilling and counter-sinking holes in sheets and plates for rivets and flat or oval-head machine screws.

Conventional Type

Users of our Type "R" or Type "S" Center Drills often encounter shop drawings that specify the use of conventional centers. So that they may obtain Ring-Seat quality throughout, we now produce conventional 60 degree center drills in the same sizes as our other types.

These Conventional Center Drills are held to the same close tolerances as our other types.

PREMIUM DRILLS AT NO EXTRA COST

LINK INDUSTRIES

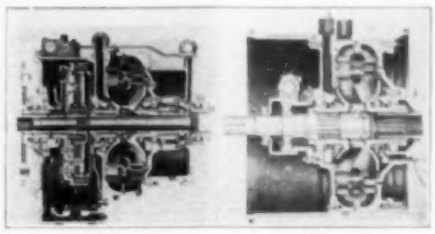
13848 Elmira Detroit 27, Mich.

FREE CIRCULAR

If you write maker identify as IEN - 14274

DRIVE . . Hydraulic transmissions for heavy equipment subject to impact

Source: TWIN DISC CLUTCH CO.
1401 Racine St., Racine, Wis.



For loads to 30 ton on 13 per cent grades

New information has been assembled on the company's three stage hydraulic torque converters, Model DF, to the left, previously described IEN-12060-51, and Model CF, to the right. The former is a direct drive model including a mechanical clutch hydraulically operated in assembly with the converter mechanism. Model CF omits the clutch and mounts a splined input shaft designed for connection to an engine clutch supplied by the user. Both assemblies provide torque multiplication to 6 to 1.

Model DF is particularly suited for truck operation where routes include flat straight-away runs in which the mechanical drive can be engaged, as well as for ascent and descent on steep grades where the torque converter is employed. Model CF is intended primarily for short runs involving constant climbing and descending for trucks on steep grades.

The company has prepared an illustrated Bulletin 501 showing both clutches, explaining their operation and capacities. Charts present truck performance characteristics. Connection diagrams are included for the fluid circuits.

If you write maker identify as IEN - 14275

TRUCK . . Diesel engine drive, fork lift, three sizes rate 2 to 3 ton

Source: TOWMOTOR CORP.
1224-28 E. 152nd St., Cleveland 10, Ohio

Specifications on request

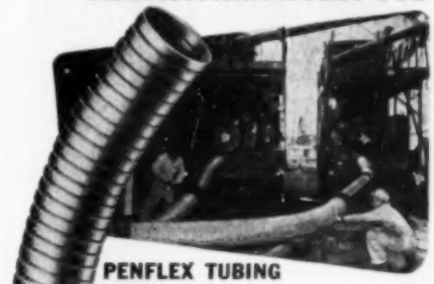
Four of the company's engine driven fork lift trucks are now available with diesel engine drive in addition to the previously assembled gasoline engine. The new trucks are economical for use under certain applications and are recommended when favorable conditions apply. Simplified design of the engine itself minimizes operating and servicing problems.

Two of the trucks with the diesel engine drive are equipped with pneumatic tires for operation indoors or outside. Rating is 37.6 hp. at 2,000 rpm. on two. It is 57 hp. at the same governed speed on the other two. Both are four-cylinder assemblies designed to start and operate on diesel fuel.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 99

If you write maker identify as IEN - 14276

FLEXIBILITY ARMED AGAINST ABRASION...ON ANY JOB



PENFLEX TUBING

PROVIDES STRENGTH . . . FLEXIBILITY . . . DURABILITY

Copra, thousands of tons of it to be unloaded. Huge pneumatic conveyors were the answer, but the tubing used for sucking the copra out of the holds must be flexible, tough and armored to stand terrific abrasion.

"Flexineering" had the answer! Lengths of Penflex full interlocking galvanized steel flexible No. 20 heavy duty hose were installed. This Penflex product answered every requirement—flexibility and free movement of hose to hold, absorption of vibration from machine, durability to withstand abrasion.

Penflex manufactures a complete line of free wall interlocked flexible metallic hose from ½" diameter to 24" diameter. Also seamless welded flexible tubing from ⅛" diameter to 2" diameter automatic barrel filers, and pneumatic rivet pusers.

◄— *To solve flexible tubing problems, file this folder*

Pennsylvania Flexible Metallic Tubing Co., Inc., 7300 Powers Lane, Phila. 42, Pa.

PENFLEX

HEART OF INDUSTRY'S LIFE LINES

If you write maker identify as IEN - 14277

IT PAYS TO INVEST IN PROTECTION

Send for Descriptive Literature

HANNIFIN "Air Warden"

Hannifin "Air Warden" safeguards against loss of production time—protects your valuable air-operated equipment three ways.

1. AIR FILTER—removes grit, dirt, scale, moisture, emulsified oil.
2. PRESSURE REGULATOR—keeps pressure where you want it. No danger of pressure build-up with "Air Warden."
3. LUBRICATOR—atomizing type lubricator, can be filled without shutting off air pressure.

Sold separately or in combination (as shown).

HANNIFIN

Hannifin Corporation • 1107 S. Kilbourn Ave. • Chicago 24, Ill.

If you write maker identify as IEN - 14278

MOISTURE'S NO PROBLEM

chase out foul, wet air!

- Good looking
- Fit any roof
- Easy to install
- Motor out of line of air flow — for better performance in moisture filled air

Muckle

WRITE TODAY FOR COMPLETE INFORMATION

Some Territories Open For Sales Representatives

MANUFACTURING CO. OWATONNA 25, MINN.

If you write maker identify as IEN - 14279

HALLOWELL "740" STEEL CART

has LOOKS for store and office
STAMINA for shop and factory

The "740" carries everything from stationery and supplies to tools and dies. Its large capacity saves countless steps and time. Its compact design is made for narrow aisles and limited space.

THE "740" FEATURES

- detachable handle—use it either end
- two trays with deep sides for safe handling—16" x 30" or 24" x 36"
- legs with unique double-angle construction—for extra strength without extra weight
- ball bearing caster races—make steering easy
- sturdy, free-rolling casters—make pushing easy

Write for literature

STANDARD PRESSED STEEL CO.
Jenkintown 14, Pa.

Shipped Knocked Down . . . IT'S EASY TO ASSEMBLE

HALLOWELL MATERIALS HANDLING DIVISION
JENKINTOWN, PENNSYLVANIA

sps

If you write maker identify as IEN - 14280

SEND FOR YOUR FREE COPY

NEW ACME BUSHING CATALOG

Contains America's LARGEST BUSHING Selection

Features 2 Standards
A. S. A. Standard Plus Acme Standard

Makes Bushing Procurement Easy . . . Fast! Send for Your FREE Copy Now!

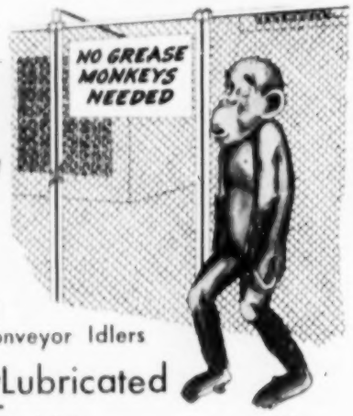
Simplifies, speeds bushing selection. Packed with valuable data. Saves you time and trouble. Also includes liners, leader pins, dowel pins, locating jigs, etc.

Serving Industry For 28 Years

ACME INDUSTRIAL COMPANY
215 N. Laflin St., Chicago 7, Illinois

MANUFACTURERS OF DRILL JIG AND FIXTURE BUSHINGS

If you write maker identify as IEN - 14281



Out of luck since Transall took over

Transall Belt Conveyor Idlers
Pre-Lubricated

No Lubrication Labor
No Lubricant Cost

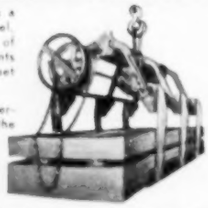
TRANSALL INC.
Manufacturers of a complete line of Belt Conveyor Equipment
117 North 11th St. Birmingham 4, Ala.

If you write maker identify as IEN - 14282

Wide or Narrow...

1 C-F LIFTER HANDLES THEM ALL

Whether your production requires a few or many widths of sheet steel, 1 C-F Lifter, with its wide range of jaw and carrying angle adjustments will probably meet all your sheet handling requirements.



Adjustments are made by the operator in a few seconds, permitting the Lifter to shift from wide to narrow sizes almost instantly.

Because it can pick up, carry and unload more loads per hour, using less man and crane time than any other methods, a C-F Lifter will soon pay for itself.

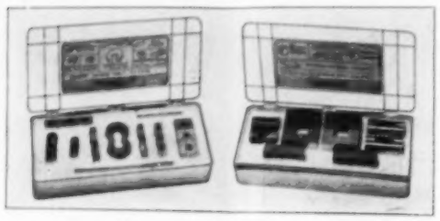
Bulletin SL-28 gives you the complete story of C. Lifter advantages to you. Ask for it today. There is no obligation.

CULLEN-FRIESTEDT CO.
1310 South Kilbourn Avenue • Chicago 23, Illinois

If you write maker identify as IEN - 14283

MAGNETS . . Experimental kits of permanent units for test setups

Source: CARBOLOY
11167 E. 8-Mile Road, Detroit 32, Mich.



$10 $15

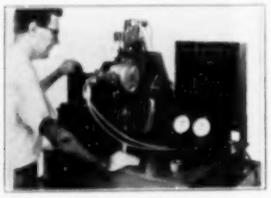
You-Try-It designates two new experimental kits of the company's permanent magnets. One contains 48 pieces in eight styles with pull capacity to 2 lb. each. The other contains 18 larger units in four styles with pull ranging from 3 to 12 pounds. The kits are shown as No. 1 and No. 2.

They are designed for test setups in applications such as recovering tools from liquid tanks, feeding sheet steel into presses, holding steel plates to paint, securing models on plant layouts, removing ferrous waste from conveyor lines and positions ordinarily inaccessible.

If you write maker identify as IEN - 14284

GAGE . . Pneumatic instrument checks critical dimensions on a piston

Source: FEDERAL PRODUCTS CORP.
1140 Eddy St., Providence 1, R. I.



Built to order

An air plug connecting to a dual assembly of the company's pneumatic Dimensionair gage is combined with a set of its Electricators in this new Model 236 B-984 piston gage. The air plug applies initially in vertical position to check both ends of the wrist pin hole in engine pistons for inside diameter, taper and bellmouth. The plug is then rotated through 180 degrees to check out of roundness and other undesirable hole conditions. Any variation from a master setting is indicated on the dials.

The gage panel is then pushed forward so the piston takes a horizontal position between the Electricator contacts. Then all of the outside diameters are inspected simultaneously by eight floating gage units. Dimensions that are beyond predetermined tolerances are shown on the indicator lamps mounted on the gage panel in diagram assembly.

Identify as IEN - 14285

Plastic pipe by Carlon Products Company is now at work in a chemical warehouse carrying hydrochloric acid from tank cars into the building for delivery into glass carboys for distribution. The acid has no effect on the plastic.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 14286

NEW! Volatile Solvent

CARBON MET

A HALOGENATED AROMATIC HYDROCARBON

A specific replacement for toxic Carbon Tetrachloride

Out and out metal dry cleaning solvent and degreaser in ready-to-use "Handy Kit" containing Patented dip and drier basket.

U. S. Pat. 2318042

- Quick Cutting solvent against stubborn dirt and grease.
- Non-Explosive and relatively non-toxic.
- Non-Corrosive to metals. • Fast, clean evaporation.
- Non-Ionic . . Ideal for degreasing and cleaning electrical parts.

MUCH FASTER CUTTING THAN "CARBON TET"
CAUSES NO RUSTING . . . LEAVES NO FILM
also economical 55 gal. size drum

IMMEDIATE DELIVERY 1 GALLON OR A TANK CAR

CURRAN CORP.
Mfg. Chemists
LAWRENCE, MASS.

120 South Canal St.

If you write maker identify as IEN - 14287

PRECISION COUNTERS
OFFER MANY EXCLUSIVE ADVANTAGES
Plus LOW COST!

IDEAL FOR Punch Presses, Drill Presses, Screw Machines, Printing Presses, Die Casting Machines, Production Lathes, Pumps, Coil Winders, Conveyors, Etc.

PRECISION Counters Assure
ACCURACY · DURABILITY
VISIBILITY · Low Maintenance Costs

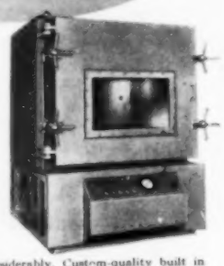
Counters for Special Applications Designed and Manufactured

WRITE NOW FOR DETAILED INFORMATION

DITTMORE & FREIMUTH CO.
2517 E. NORWICH AVE., CUDAHY, WISCONSIN

If you write maker identify as IEN - 14288

New ALTITUDE SIMULATION CHAMBER



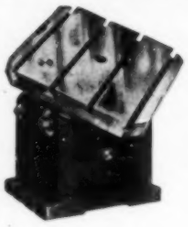
- Altitude Range to 120,000 feet
- Temperature Range from 300° F. to −140° F.
- Micrometer Temperature Adjustments hold ±2° F.
- Compact Design . . Requires less Floor Space
- Humidity Cycle available

Providing extreme flexibility in temperature and vacuum ranges, M & M Altitude Simulation Chambers give you precise control and easier, simpler operation that will reduce test costs considerably. Custom-quality built in every detail, M & M Chambers are designed to meet Government altitude simulation test standards. Available with many optional features to speed testing, such as Program Heating, Cooling, and Humidity Cycles, Automatic Recorder for controlling and integrating temperature, humidity and altitude. Write for details on Altitude SIMULATION Chambers as well as M & M Temperature Test equipment.

MURPHY & MILLER, Inc.
1924 South Michigan Avenue Chicago 5, Illinois

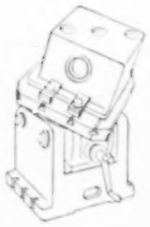
If you write maker identify as IEN - 14289

universal tables



save up to 50% of set up time on radials and boring mills

With one set up on Cincinnati Gilbert universal tables, you can drill at any angle up to 90° on five sides of a cube. Special feature: four-point support of the work in the lowered position takes strain off the worm, provides greatest possible rigidity of the work, best insurance of accuracy. Table sizes: 22" and 27" square. Height: 22". Four 5/8" tee slots. Write for Bulletin 749.



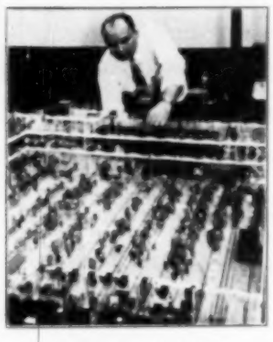
THE CINCINNATI GILBERT MACHINE TOOL COMPANY
3366 BEEKMAN ST. • CINCINNATI 23, OHIO

RADIALS
BORING MILLS
ACCESSORIES

If you write maker identify as IEN - 14290

The "VISUAL" Repro-Templet Method*

TRADE MARK



The only 3-dimensional model and film templet method that provides means of securing blueprint or white prints directly from the completed 3-dimensional layout, using your own printer.

6¢ per square foot (200,000 or more) of plant area for complete plant** . . . building, *all* equipment and film templets.

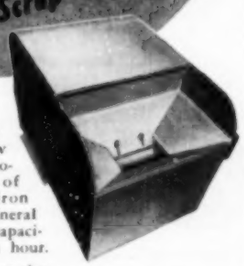
*Patented in U. S. and Canada
**Any industry

"VISUAL" PLANNING EQUIPMENT CO., INC.
1 Pennsylvania Avenue
Oakmont, Allegheny County, Penna.

If you write maker identify as IEN - 14291

Get more money for your Non-Ferrous Scrap!

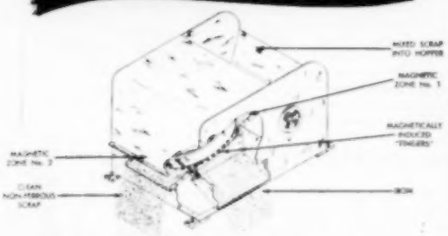
Remove iron with the New DINGS Non-electric Dual Zone "MA" Scrap Separators



DINGS Dual Zone "MA" is equally effective on wet, dry or greasy flows—sets new standards in the automatic separation of loosely entangled iron from shop scrap, mineral concentrates, etc. at capacities up to a ton an hour.

Use of powerful non-electric DINGS Alnico magnets in the "MA" eliminates need for generator sets or rectifiers. Magnetic permanence is guaranteed for the life of the unit.

HOW IT WORKS!



Mixed ferrous and non-ferrous scrap flows down chute through two successive magnetic zones created by powerful non-electric Alnico magnets. At each zone iron is picked out of non-ferrous scrap and discharged to the side by magnetically induced "fingers" in rotating disc. Any iron getting past first zone is caught at second — *double-barreled iron removal* to insure a clean end product!

Get the complete story on the new DINGS Dual Zone "MA" Separator — send for bulletin giving construction details, dimensions, capacities and other important data — today, write:

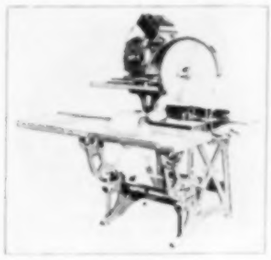
DINGS MAGNETIC SEPARATOR COMPANY
4755 W. Electric Ave., Milwaukee 46, Wis.

DINGS MAGNETS

If you write maker identify as IEN - 14293

WOODWORKING . . Combination unit with two saw spindles and a jointer

Source: MASTER WOODWORKERS MFG. CO.
405-11 E. Fort St., Dept. IN, Detroit 26, Mich.



Bulletin, "12 Machines"

Several changes have been made in the company's Universal Woodworker to further improve this machine. It has been in operation in utility service for a good many years. The cross-cut radial arm can be aligned with the slide to maintain accurate operation. Never Slip pulleys are standard equipment. An improved rip fence is adjustable and is now made of bar stock for heavy duty service.

The machine mounts one saw spindle on a radial arm and a second spindle beneath the tilting work table. At the side of this table is a jointer. The rear of the radial arm spindle can be used to mount a boring bit.

Five machine sizes are equipped with 8 by 30 in. to 17 by 61 in. tables and with 4 by 24 in. to 8 by 43-in. jointers. The smallest machine takes 7-in. cross cut and 8-in. rip cut circular saw blades. The largest takes 18 in. blades at both positions. Rip capacity ranges from 1 to 6 in. in work thickness and from $\frac{3}{16}$ to the center of 8 in. in the smallest machine or from $\frac{3}{16}$ to the center of 24 in. in the largest assembly. Cross cut capacity ranges from 1 to 6 in. in thickness and from 15 to 23 in. in width. Overall dimensions are 34 by 25 by 29 in. to 63 by 44 by 60 inches.

If you write maker identify as IEN - 14294

PRESS . . Motor driven machine rates 6 in. hole through 16 gage steel

Source: O'NEIL-IRWIN MFG. CO.
547 Eighth Ave., Lake City, Minn.

Particularly to blank

New design, provided with motor drive, has been added to the company's hand operated punch presses No. 1 and No. 2, previously described IEN 8804-50. The new machines have 6¼ and 12¼-in. throat capacity with maximum vertical opening at about 2¼ in. and stroke at ⅝ inch. Operation is at 180 strokes per minute.

Control centers at a foot pedal to leave both the operator's hands free. Moving parts are enclosed in a welded steel housing. The press need not be bolted down and is available for use on a bench or in the floor mounted assembly shown in the illustration.

Weights are 540 and 715 pounds. Floor space measures 17 by 28 inches. The company is prepared to supply a line of punches and dies. The driving motor rates ½ hp. and is available for operation on single or three-phase ac.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

If you write maker identify as IEN - 14295

step up production with STOW flexible shaft MACHINES

Stow STREAMLINER N-40

3-SPEED JIFFY SJ-38

These dependable STOW FLEXIBLE SHAFT MACHINES save production time . . . speed up output . . . help lower production costs. Variable Speed Models shown are easily portable . . . cut down operator fatigue and increase on the job efficiency!

Constant Speed Models available. Also complete line of accessories designed to increase the utility of STOW Flexible Shaft Machines!

WRITE TODAY
for your free copy of CATALOG 51

STOW MANUFACTURING CO.
25 Shear St. Binghamton, N. Y.

If you write maker identify as IEN - 14296

7 important advantages with MOTCH & MERRYWEATHER HEAVY DUTY ANTI-WELD SOLUBLE OIL

Triple-Chip deters welding and pick-up; prevents rust. Consequently, tool life is lengthened and accurate, milled-finish work is produced. Tool maintenance and replacement is reduced. Furthermore, Triple-Chip is non-injurious to the skin, is smokeless and odorless.

Get a supply today from your local dealer.

THE MOTCH & MERRYWEATHER MACHINERY CO.
PENTON BUILDING CLEVELAND 13, OHIO
COMMAND OUR UNPARALLELED EXPERIENCE IN CIRCULAR SAWING

If you write maker identify as IEN - 14297

Drill More Holes Per Hour In ANY Pattern . . . On ANY Drill Press

with a *Adjustable* MULTI-DRILL

DRILLS 2 to 8 HOLES at ONE STROKE

Increase production up to 800% . . . save time, cut costs. MULTI-DRILLS make any drill press produce *more*. Attached without alterations or special tools. Quick, easy setups of universally adjustable spindles give you more flexibility . . . wider application. Handles any hole pattern within 9" circle; centers close as ½". Extension Spindles available to increase working area to 22½". Special adaptations available.

model 900

See your Commander Distributor for complete details. Write for the NEW Commander Full Line Catalog No. 851.

COMMANDER MFG. CO.
4219 W. Kinzie St. • Chicago 24, Illinois
Product of *Commander* . . . Builder of Production Tools

If you write maker identify as IEN - 14298

metso saves JUMPERS, UNIFORMS . . .

Launder them with Metso Detergent and they will last longer. Tensile strength tests prove Metso is kind to fibres. Each load from the washwheel is clean and bright because Metso's balanced silica components help soap to remove more dirt. A sample of Metso and handbook of useful data on laundry practice mailed free.

Philadelphia Quartz Company
1131 Public Ledger Building, Phila. 6, Pa.

Metso® Detergents

Efficient Metso Silicated Detergents used in dozens of other industrial cleaning operations.

If you write make identify as IEN - 14299

WEIGH MATERIALS ON THE SPOT SAVE UP TO 22% ON LABOR COSTS

Compact Low-Cost

DILLON Weight Indicator

Picking materials up, moving them to a scale, setting them down and then picking them up again means *double* handling and greatly increased operational costs. With the DILLON Weight Indicator, loads are checked on the spot the instant they are lifted. Accuracy is guaranteed to be within ONE division or less at any point on the dial. Adjustable for large tare loads. 16" dial. Swivel hook. Accidental overload and shock protected. 8 capacities from 0-250 pounds up to 0-20,000 pounds. Portable — weather proof — dust-proof. Each unit checked with certified dead weights. Extreme utility at LOW cost!

Write today for illustrated, descriptive literature

W. C. DILLON & CO., INC.

14620K Keswick St., Van Nuys (Suburb of Los Angeles), Calif.

If you write make identify as IEN - 14300

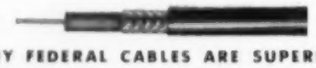
TOPS in Transmission Line for HF · VHF · UHF

Federal

RG TYPE CABLES

including the Federal-developed low-temperature, non-contaminating thermoplastic jacket

DESIGNED FOR: H F communications, television, industrial electronics, radio and TV lead-ins, aviation, test equipment, radar, pulse and experimental equipment.



WHY FEDERAL CABLES ARE SUPERIOR:

- **CONDUCTORS** meet highest ASTM standards
- **DIELECTRICS** of stabilized polyethylene
- **BRAIDS** meet highest ASTM standards
- **JACKETS** of latest developments in vinyl and polyethylene

Fully tested for Capacitance, Attenuation, Continuity, High Voltage

Federal Telephone and Radio Corporation

100 KINGSLAND ROAD CLIFTON, N. J.

If you write make identify as IEN - 14301

HOW TO PICK THE RIGHT PUMP FOR YOUR PURPOSE

THIS?...

THIS?...

THIS?...

or THIS?

Tuthill now makes it easy for you to select the pump best-suited to the service you require. In one simple, letterhead-size table, the Tuthill Pump Guide gives you the details you need—types of service, pump models for each, capacities, pressures, speeds, packing, mountings, and exclusive features. Saves time, work and trouble.

Write for this **PUMP GUIDE** today!

TUTHILL PUMP COMPANY

If you write make identify as IEN - 14302

TRUCK . . Special electric unit handles work into and out of furnace

Source: MERCURY MFG. CO. 4132 S. Halsted S., Chicago 9, Ill.

Load rating is 2 ton

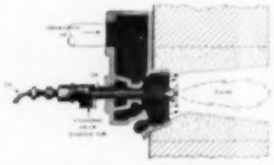
A power operated tilted load carrier, modified fork design, is mounted at the front of this new Model A-3481 special motor driven truck to pick up a stack of annealing pots filled with castings and place them in an oven. The truck removes the pots after the heating interval is completed. At this point in the process the pot temperature is 400 deg. F.

The tilting action provides sufficient lift to pick up the pots and carry them in safe reverse tilt at 10 deg. with vertical. Turning radius is about 50 inches. Speed is 6 miles per hour. Overall dimensions are 115 by 47 inches. The wheel base measures 48 inches. The power source can be either an engine generator unit shown in the illustration or a standard battery of 30 or 36-volt type and 450 amp. hr. rating.

If you write make identify as IEN - 14303

HEATING . . Oil and gas burner operates over 10 to 1 turndown range

Source: BLOOM ENGINEERING CO. 855-59 W. North Ave., Pittsburgh 33, Pa.



Ask for Bulletin C-220

Type LP designates a new burner for operation on 16-oz. atomizing air to install in furnaces for forging, batch type heating, heat treating. Is is particularly suited for operation requiring a wide turn-down range. It will operate satisfactorily with minimum flow of about ½ gal. of oil per hour. The flame will remain stable with excess combustion air at 300 per cent.

Atomizing air inlet surrounds the oil feed tube that leads to the atomizing tip. This connection can be changed from air to gas when the burner is to operate on gas rather than oil. Four sizes in the line rate 180,000 to 1,000,000 btu. per hour. Overall body length is 10½ to about 14 inches.

Identify as IEN - 14304

New service to eliminate scrap handling has been established by Reynolds Metals Company in which it will supply aluminum blanks to your specifications in required contour and with any holes and openings you want. You take off from there for your assembly or further forming operations. Scrap which the company makes in its shearing and blanking is remelted immediately so there is no need to handle, store, segregate, return it. The company will quote to your drawings.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write make identify as IEN - 14305

AERO-SEAL WORM-DRIVE HOSE CLAMPS

WON'T SHAKE LOOSE!

Use of Stainless Steel Subject to Government Regulations

Wherever you have to clamp a hose connection tight . . . or wherever you want to lock two objects of any shape together in an unshakeable bond . . . your best bet is AERO-SEAL.

Threads of steel worm engage deep into slots in stainless steel band — hold tight under extreme vibration in automotive, aircraft and industrial applications. CAN'T SHAKE LOOSE.

One-Hand Installation

Install an Aero-Seal any place you can reach with thumb and one finger. Self-feeding when band engages worm threads. Thumb-grip and screwdriver types.

Re-use Again and Again

When hose is worn you RE-USE the same Aero-Seal again and again. RE-USE Aero-Seals on temporary clamping jobs—they conform to any shape without damaging band.

Aero-Seal® WORM DRIVE **HOSE CLAMPS**

ANOTHER BREEZE PRODUCT

BREEZE CORPORATIONS, INC. 41 South Sixth St. Newark, N. J.

If you write make identify as IEN - 14306

SUCCESSFULLY USED BY LARGE AND SMALL PLANTS . . .

PRECISION ANGLE PLATE AND VISE . . .
that does everything!

Made of case hardened steel. Precision ground and square all over. Puts clamping pressure directly on right spot; holds any position securely, and serves many purposes better than any other squaring device. Ideal for home mechanic, or plant.

Max. opening 2¼"; weight 5¼ lbs. Larger sizes available. Order now for prompt delivery.

AS LOW AS **38.50**

WRITE FOR FREE CATALOG

If you write make identify as IEN - 14307

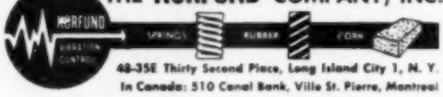
STOP VIBRATION and

- Improve Equipment Layout
- Reduce Machine Installation Costs
- Improve Work Quality
- Reduce Maintenance
- Improve Employee Efficiency

Write for your free copy of Bulletin G-105

Representatives in Principal Cities

THE KORFUND COMPANY, INC.



48-35E Thirty Second Place, Long Island City 1, N. Y.
In Canada: 510 Canal Bank, Ville St. Pierre, Montreal

If you write make identify as IEN - 14308

WET CLASSIFIERS

The Hardinge Counter-Current Classifier (illustrated) is a simple and trouble-free device for wet separations between 20 and 200 mesh. For finer separation down to micron sizes, a Hardinge Hydro-Separator is used. Write for Bulletin 39-B-38 on wet classifiers.

AIR CLASSIFIERS

The Hardinge Air Classifier, operating in conjunction with the Hardinge Mill, is a compact, self-contained unit of unusual efficiency. The material is conveyed without auxiliary apparatus to any convenient location in the building. The Hardinge "Loop" Classifier delivers products ranging from 50% to 99% minus 200 mesh. The Hardinge "Superfine" Classifier (illustrated) can produce 99½% plus passing 325 mesh.

Bulletin 17-B-38

HARDINGE COMPANY INCORPORATED

YORK, PENNSYLVANIA—240 Arch St. Main Office and Works

NEW YORK 17 • SAN FRANCISCO 11 • CHICAGO 6 • HIBBING, MINN. • TORONTO 1
122 E. 42nd St. 24 California St. 205 W. Wacker Dr. 2016 First Ave. 200 Bay St.

If you write maker identify as IEN - 14309

CERROLOW-117 (with Bismuth and Indium)
a non-shrinking casting metal that melts at 117 F.
---what can it do for **YOU?**

Some Practical Applications

1. **Fire alarm fuses for domestic and commercial use. Alarm will sound *before* a sprinkler system goes into action!**
2. **Thermal fuses to shut off machines or processes in case of harmful or dangerous elevation of temperature.**
3. **Supporting or nesting delicate parts, preventing distortion or shifting during grinding, milling or other machining operations. Turbine buckets, compressor blades and vanes held in this alloy, after accurate positioning, are ground to very close tolerances.**
4. **Proof casting molds, dies, gun chambers and fine tapped threads. Low pouring temperature assures absolute minimum expansion of parts and two tenths inch per inch shrinkage affords accurate measurements.**

Write for detailed information

CERRO de PASCO Corporation
Dept. 6 • 40 Wall Street • New York 5, N. Y.

If you write maker identify as IEN - 14310

THERE IS AN **R-B-M** *CONTROL To Fit Your Needs*

A.C. MAGNETIC STARTERS with Plasti-Clad Magnet Coil • *Write for Bulletin 605*

Full accessibility in a small package. Contacts, coil and thermal element replacement with use of screwdriver only. Magnet coil—in molded phenolic case with riveted terminals—is completely embedded in a rock-hard resinous material, thus protecting against oil, dirt, moisture and normal mechanical damage.

HERMETICALLY SEALED RELAYS • *Write for Bulletin ASR*

50% smaller—lighter. R-B-M 22204-0 meets AN 3504-1 specifications. R-B-M engineers have developed the 22300-0 currently used in government electronic, air-borne and ground equipment—as the electrical and mechanical equivalent of the AN 3504-1, yet 50% smaller in size with ½ the weight.

INDUSTRIAL CONTACTORS with Plasti-Clad Magnet Coil • *Write for Bulletin 600*

2-8 poles Non-Reversing. 2-5 poles Reversing. 25 Amp—600 AC Max. Contacts can be replaced without removing wiring. To change coil, remove magnet frame and coil assembly only. 10 and 15 amp. poles can be changed from normally open to normally closed by using screwdriver only.

GENERAL PURPOSE RELAYS • *Write for Bulletin 570*

Low cost. Small size. Dependable performance. Available in many contact arrangements. Whatever your needs for inexpensive, dependable relays for commercial applications—investigate R-B-M General Purpose Relays.

Other R-B-M products include; motor overload protectors, motor starting relays and low voltage DC electrical devices.

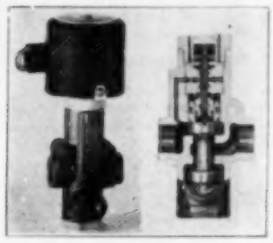
Consult R-B-M on Your Control Problems — Write Dept. L-12

R-B-M DIVISION ESSEX WIRE CORP.
Logansport, Indiana
MANUAL AND MAGNETIC ELECTRIC CONTROLS FOR AUTOMOTIVE, INDUSTRIAL, COMMUNICATION AND ELECTRONIC USE

If you write maker identify as IEN - 14312

VALVE . . Solenoid actuated, pilot controlled, pressure to 500 lb.

Source: BARKSDALE VALVES
1564 E. Slauson Ave., Los Angeles 11, Calif.



To 600 cycles per minute

The solenoid in this new Model-1034 three-way valve operates a pilot piston that opens and closes a pressure port connecting to the inlet side of this new valve. Depending upon the position of the solenoid and pilot, pressure will be applied on or released from the top of the main valve piston to connect the outlet side to the pressure line or to exhaust. Internal view is illustrated to the right.

The valve is available in four sizes from ¼ to ¾ inch. It is designed to handle air, light oil, water in a pressure range from 20 to 500 lb. on either normally open or normally closed service. It can be specified with an ac. or dc. solenoid rated for continuous duty on standard voltage. Connections are made through a ⅛-in. threaded outlet in the side of the solenoid cover. This outlet positions around a complete circle with reference to the valve body.

If you write maker identify as IEN - 14313

PROTECTING . . Dock cover shelters activity on shipping platform

Source: ATLAS PRODUCTS CO.
1302 W. Washington Blvd., Chicago 7, Ill.

Weatherproof canvas

Pantograph arms, secured to the walls on the two sides of a doorway to a shipping platform, support a canvas fitted frame in this new loading dock shelter. The arms retract toward the building wall or can be extended to carry the cover to the entrance to a freight car or truck. In this position the trucking lane is enclosed against the weather. The company is prepared to supply the cover in specified sizes to meet given space requirements. Several standard models are included.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

PLEASE WATCH FOR YOURS

Certain copies of this publication for the next few months will carry a post card on the front page. It is intended for your use to make sure you still want to remain on our mailing list. Please watch for the one with your name on it.

OK or correct your name and address as they appear on the card. Please also check the question asked. They are simple, self-explanatory, essential to our circulation audit.

If you write maker identify as IEN - 14314

A Paid News Advertisement by Mathewson Machine Works

NEW ADJUSTABLE DRILL JIG eliminates layout; cuts drilling time

Used for drilling holes through round stock and hex stock from ¼" to 2" and cap screws from ⅛" to 1¼", the new Mathewson Adjustable Drill Jig eliminates layout and can cut drilling time on small lots to a fraction. And it eliminates the costs of special jigs for larger quantities. Holes for cotter pins, set screws, drive pins for bayonet joints, oil holes in tubular sections, and wiring holes in cap screws, are all typical of the operation that can be done more economically with this jig. Hole diameters range from .062" to .531", using your A.S.A. standard slip bushings. The hardened V-block has two 60-degree V's for centering round or hexagonal stock, one for ¼" to 21/32" diameter, one for 21/32" to 2" diameter. Adjustable stop for locating work longitudinally for drilling any distance from end, may be used on either side. Adjustable bushing carriers hold slip bushings and clamp work securely. Jig highly successful in permitting use of inexperienced drill operators. For circular write to: **Mathewson Machine Works**, 26 Hancock Street, Quincy, Mass.

If you write maker identify as IEN - 14315

WHETHER IT'S ORIGINAL EQUIPMENT DESIGN OR CHANGING OVER TO AIR, YOU MAY SAVE ENORMOUSLY BY STANDARDIZING ON . . .

VALVAIRS

Thanks to Diversatility

* * *

ESPECIALLY ADAPTED TO TOOLING AND FIXTURE DESIGN

* * *

3-way, knob-operated air control valve.

• Valvair Diversatility is an exclusive, original form of standardization. Five basic bodies permit incorporating any one (or two) control assemblies with a standard valve body. Unique Valvair advantages enable us to speed your order at no extra cost. . . Sizes: ⅛" through 1". May we fill your orders now?

Get New Bulletin "Q-12"

VALVAIR CORPORATION
Affiliate: Sinclair-Collins Valve Co.
949 Boardsley Ave., Akron 11, Ohio

REPRESENTATIVES IN PRINCIPAL CITIES

Rely Upon **Valvair**

If you write maker identify as IEN - 14316

JOHNSON *Rotary Pressure* **JOINTS**

The Johnson Joint has solved many design and production problems as nothing else can. And the Type L, shown above, is helping to fit it into more applications all the time. It has lugs cast on body to permit simple rod support, an arrangement that both simplifies installation and assures proper alignment. Completely packless, self-lubricating and self-adjusting, the Type L Johnson Joint is used on calenders, dryers, mills, etc. — wherever steam or liquids must be admitted to rotating machine parts.

Write for new catalog

The Johnson Corporation
846 Wood St., Three Rivers, Mich.

If you write maker identify as IEN - 14317

'TAIN'T NECESSARILY SO!

That You Buy Several Ingredients

To Repair Ruined Concrete Floors

STONHARD STONPACH

COMES COMPLETE IN ONE CONTAINER

. . . you just add water! Where floors are ruined by acid, grease, oil or excessive water STONPACH is the answer. Only ½ inch is necessary and it bonds without shrinking. You get a first-hard surface that takes less time to install and lasts many times longer than concrete. Let us tell you the full story.

STONHARD COMPANY
Building Maintenance Materials since 1922
102 Stonhard Building, 1306 Spring Garden St., Philadelphia 23, Pa.

Please send me your STONPACH folder: 102/12/52
Name .....
Company .....
Address .....
City ..... Zone ..... State .....

If you write maker identify as IEN - 14318

FASTER START STOP HOLD

THE NEW IMPROVED Stearns MAGNETIC DISK BRAKE
STOPS COASTING MOTORS, SAVES TIME, MONEY

Here's the new STEARNS Style "H" Magnetic Disc Brake . . . designed for safer operation . . . for longer life . . . with less wear and maintenance. For effective stopping and holding of motors and machinery, this improved brake gives a faster release . . . is shorter in length . . . adaptable for floor or motor mounting . . . or for vertical or horizontal applications. Available in standard or dust-tight, water-proof enclosures direct or through major motor manufacturers. Write today for complete specifications.

Foremost in the Magnetic Field
Stearns MAGNETIC INC.
626 SOUTH 28th STREET • MILWAUKEE 46, WISCONSIN

If you write maker identify as IEN - 14319

KIPP Air Grinders

MODEL JA
50,000 R.P.M.
Weight 12 ounces; length 6½ inches; chuck size ⅛ inch. Wheel guard removed for better illustration.

$42 IN U.S.A.

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.
224 Waubesa St., Madison, Wis., U.S.A.

Write for KIPP Air-Tool Catalog AT 3006

If you write maker identify as IEN - 14320

BLACK & DECKER HOLGUN* HAS STALL-PROOF MOTOR

TOWSON, MD.—The newest ¼" Heavy-Duty Holgun, with a more powerful B&D motor, can't be stalled at rated capacity, according to tests made by The Black & Decker Mfg. Co. This new electric drill features 25% more power than previous models, along with a new handle shaped for plenty of finger-room. Husky, high-quality parts for which Black & Decker has long been famous make the new Holgun a truly *heavy-duty* tool. Weight has been held to just 3¼ lbs., for fatigue-free operation. For demonstration, see any B&D Distributors. For free literature, write: THE BLACK & DECKER MFG. CO., 608 Pennsylvania Ave., Towson 4, Md.

BLACK & DECKER ¼" HOLGUN
LIGHTWEIGHT — ONLY 3¼ LBS.
ONLY $44.00

*Trade Mark Reg.

LEADING DISTRIBUTORS EVERYWHERE SELL
B&D Black & Decker
PORTABLE ELECTRIC TOOLS

"I WISH I HAD"

This column concentrates upon reader requests for information on sources of supply for products or services or technical advice which we ourselves cannot supply, advises you of new patent-protected products for your possible manufacture, and available surplus of specialized products.

It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

DRILLING . . "I wish we had a source for a portable electric drill that would have a non-metallic housing which would not conduct electricity and could be used in locations subject to electrical shock if the housing were metallic." **IEN W-113**

ENGINEER . . "I wish I had contact with a firm requiring the services of an industrial engineer to coordinate product design and tooling with selling. I have 11 years of experience in product development covering plant facilities, manufacturing, engineering, tool design and market acceptance. I am in Western New York." **IEN W-114**

MATERIAL . . "I wish I had a source for a material, other than glass, to resist antimony trichloride." **IEN W-115**

NEW PRODUCT . . "I wish I had a buyer for my patented interchangeable punch set known as "Quick-Set". I am located in Milwaukee, Wis., and will be glad to send a sample set and literature upon request." **IEN W-116**

NEW PRODUCT . . "I wish I had a manufacturer to make and sell my patented straight safety razor, Patent No. 2,610,386. I am in Detroit." **IEN W-117**

SURPLUS . . "I wish we had a buyer for 15 Reuland Electric ½-hp. synchronous motors for operation on 3-phase 220/440-volt 60-cycle ac. at 1,800 rpm. Frame is No. 203. The motors are rated for continuous duty on 40 deg. C. rise. They are in Pasadena, California." **IEN W-118**

SURPLUS . . "I wish we had a purchaser for a MacBeth Illuminometer. It is in storage in Chicago." **IEN W-119**

SURPLUS . . "I wish we had a buyer for four bars of 80-17 nickel chrome alloy. Each is about 5 ft. in length and is machined on eight sides. Smallest diameter dimension is about 3⅞ inches. The bars are in Detroit." **IEN W-120**

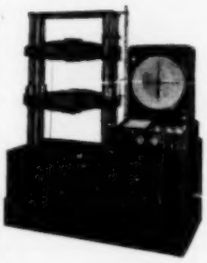
Say It With U. S. Savings Bonds

Merry Christmas

If you write maker identify as IEN - 14321

FROM DINNER BELLS TO MORTAR SHELLS

You can test practically *anything* with a versatile RIEHLE Universal Testing Machine . . . from small specimens with a relatively low-rupture-point to large, high-yield-point specimens. That's because every Riehle Pendomatic Universal Machine has 5 scale ranges — the equivalent of 5 testing machines in one. Ask your Riehle representative or write our factory for illustrated catalogs on Riehle Universal Testing Machines with hydraulic loading unit or screw power loading unit.



RIEHLE TESTING MACHINES
Division of American Machine and Metals, Inc.
East Moline, Illinois

If you write maker identify as IEN - 14322

New High-Performance FLOW METERS

Basic advances in the complete new line of Foxboro Orifice-Type Flow Meters now afford higher sustained accuracy with less maintenance than ever before obtainable.

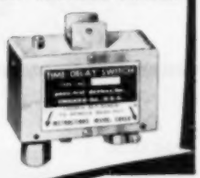
Advanced features include: new improved Segmental Drive Assembly, new friction-free Pressure Seal Bearing, new positive-seating, submerged Check Floats, new self-aligning U-Bend and Damping Plug Assembly, new compact Float Chamber, and complete interchangeability of round and rectangular case models.

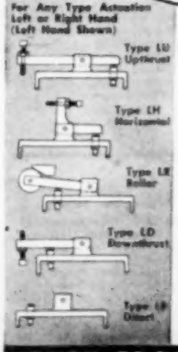
Get complete details. Write for Bulletin 460. The Foxboro Company, 4212 Neponset Ave., Foxboro, Mass., U. S. A.

FOXBORO FLOW METERS
Reg. U. S. Pat. Off.

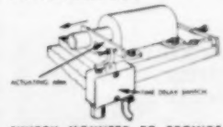
If you write maker identify as IEN - 14323

NEW CYLINDER TIME DELAY CONTROL SWITCH INCREASES APPLICATION . . . WIDENS USE OF CYLINDER POWER





Pneu-Trol Time Delay Switches provide independent hydraulically controlled adjustable time dwell between ¼ and 60 seconds in 20 to 1 ratios. Readily mounted on machine for cylinder dwell at a positive stop. Compactly designed—a simplified low cost answer to electrical time dwell control of any air or hydraulically operated machine movement such as press work, burnishing, coating, quenching, metal-cutting, etc. Ideal for automatic feeders.
Dimensions: 4½" wide, 2⅛" high, 1-7/16" deep. Overall height 4⅞".



SWITCH MOUNTED TO PROVIDE DWELL AT END OF POWER STROKE

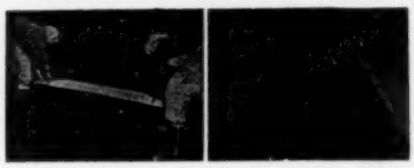
Write for descriptive literature and complete details.

PNEU-TROL DEVICES, INC.
1438 N. Keating Ave. Chicago 51, Illinois

If you write maker identify as IEN - 14324

NEW FLOORS IN 24 HOURS

FLOORS LAID TODAY • READY FOR USE IN 24 HOURS



Install "PERMAFLEX" HARD MASTIC any thickness required over Old Rough Concrete or Wood Floors, Aisles, Platforms, Walks or Drives. INTERIOR OR EXTERIOR. Edges are splayed to a feather edge.

3000 LBS. PRESSURE PER SQ. IN WILL NOT RUT

No Dust • No Chipping • No Delays to Production

We Contract for Complete Installations

Prices Are Amazingly Low

Over 2,000 SATISFIED USERS INCLUDE: General Electric — Westinghouse — U. S. Steel — General Motors — Chrysler — Atlantic Steel — A. O. Smith — Leading R. R. and Warehouse Companies

PERMAFLEX FLOORS ARE
• Heavy Duty • Slipproof • Fire Resistant • Warm & Quiet
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New York—Wis. 7-5474
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St. Louis—Lucas 3700
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INSTALL COMPLETE 15c per square foot

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1846 NORTH FRONT STREET PHILA. 22, PA.